

JUNE, 1953

MATERIAL **FLOW**

HANDLING • PRODUCTION • PACKAGING AND SHIPPING

Bulk Material Goes Where & When You Want It.....page 66

Industrial Wheels.....page 73

Handling Controls Provide Precision Timingpage 78

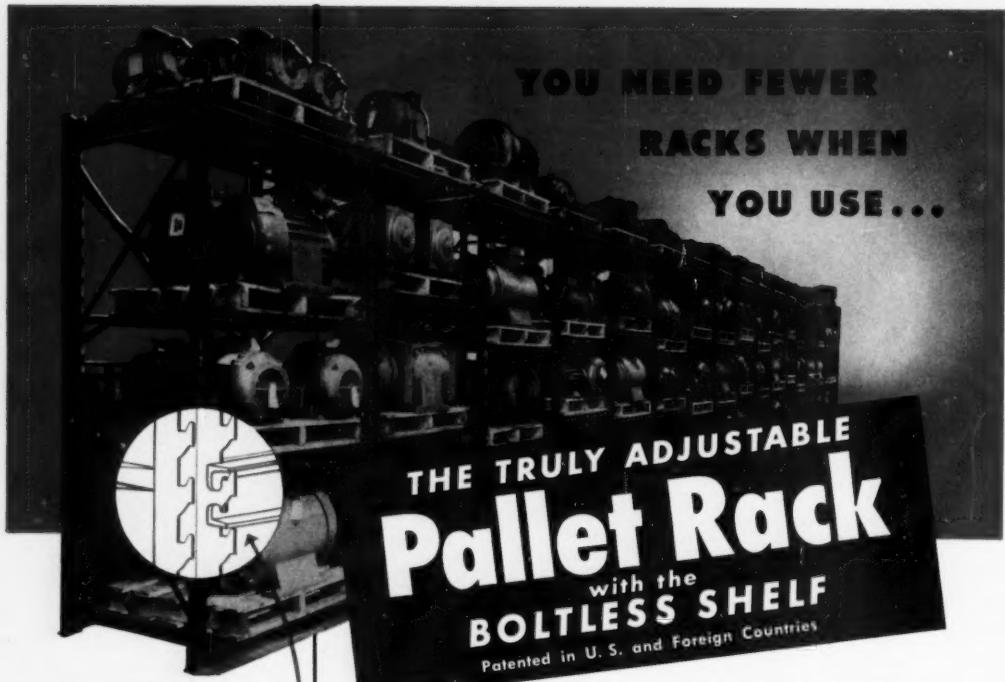
High Capacity Storage for Low Ceiling Areas.....page 80

Here's How to Package Fragile Productspage 111

Packaging for Preservationpage 118

New Productspage 40 Useful Literaturepage 134

DO YOU KNOW THE DETAILS OF THE }
THIRD METHOD OF CIRCULATION } See Back Cover



YOU NEED FEWER
RACKS WHEN
YOU USE...

**THE TRULY ADJUSTABLE
Pallet Rack**
with the
BOLTLESS SHELF

Patented in U. S. and Foreign Countries

No bolts...no wrenches necessary. The boltless shelf adjusts to any size opening on 4" centers. No space is wasted.

Rack Engineers have the profit-making answers to your production and storage problems. We'll show you how. Just phone or write . . . there's no obligation.

TEST EQUIPMENT AVAILABLE

RACK
ENGINEERING COMPANY
CONNELLSVILLE, PENNSYLVANIA
LONDON, ENGLAND

AGENTS IN PRINCIPAL CITIES UNITED STATES, CANADA, EUROPE



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NEW RIDING-TYPE ELECTRIC
STACKER

2500 LBS. CAPACITY—48" LONG LOAD
4000 LBS. CAPACITY—48" LONG LOAD

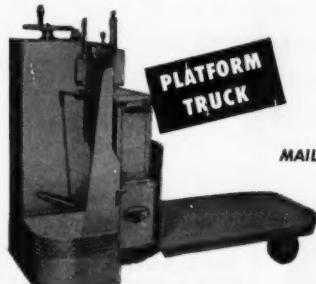
Lightweight, compact, maneuverable, rugged. Fills need for a low-cost stacker for extreme close-quarter lifting, moving and stacking in 6 foot aisles... for limited capacity floors and elevators.



NEW RIDING-TYPE ELECTRIC
PALLET TRUCK

4000 LBS. CAPACITY—48" LONG LOAD

The Transveyor Pallet Truck with an overall length of only 29½" (less forks) makes possible right angle storing of 48" x 48" loads from aisles as narrow as 6½ feet. This means greater utilization of floor space plus quicker access to work areas.



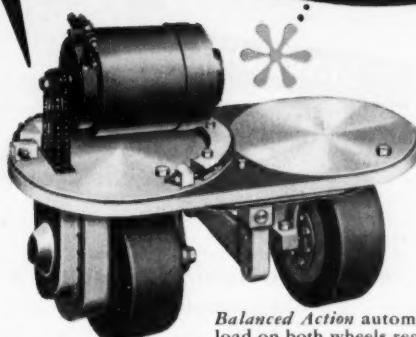
NEW RIDING-TYPE ELECTRIC
PLATFORM TRUCK

4000 LBS. CAPACITY

Short, compact, highly maneuverable, Transveyor Platform Truck speeds operations in congested areas, plant or warehouse and on narrow, crowded shipping docks where time and space are restricted.

The only extreme narrow-aisle, close-quarter truck
with **BALANCED ACTION***

Automatic's
NEW COMPLETE LINE OF
Transveyor
RIDING TYPE ELECTRIC TRUCKS



Exclusive
**BALANCED
ACTION**
for greater
economy,
longer life!

Balanced Action automatically equalizes the load on both wheels regardless of floor conditions. With conventional rigid axle mounting, uneven floors can cause improper load distribution, chassis distortion, and excessive wear.

But with Transveyor Balanced Action, uneven floor surfaces are compensated for by the exclusive center pivoted feature. This eliminates frame distortion and uneven load distribution.

Single steering wheel with uncontrolled action of caster follower may cause excessive tire damage and wear as well as unnecessary chassis vibration.

But with Transveyor, exclusive Balanced Action, drive and idler wheels are connected by a tie rod and steer simultaneously. This greatly increases tire life by eliminating scrubbing action.

MAIL COUPON TODAY!

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141 W. 87th Street, Dept. H-3, Chicago 20, Illinois

Please send, without obligation, free literature on the new Automatic Transveyors.

Company Name _____

By _____ Position _____

Street Address _____

City _____ Zone _____ State _____

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waste of manpower
and materials!

START THIS

use of permanent,
returnable bulkheads!



Get out your pencil and start figuring your dunnage cost using old-fashioned wooden gates and you'll quickly see the substantial saving you can effect by changing to permanent, *returnable* Pittsburgh steel bulkheads. You do away with lumber, straps, anchor plates and special tools, and each Pittsburgh Bulkhead can be installed by two men in two minutes. Moreover, each unit is so sturdily built

that it will last indefinitely and reduce damage claims to an absolute minimum. *Experience has already shown that a Pittsburgh Bulkhead will pay for itself in savings of labor and materials in an average of 20 trips . . . the rest is profit to you.* Why not start saving dunnage money now . . . write today to Dept. FL, Pittsburgh Steel Products Company, Grant Building, Pittsburgh 30, Pennsylvania.

BULKHEADS

a product of **Pittsburgh Steel Products Company**

A Subsidiary of Pittsburgh Steel Company
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The Steel
Industry
Needs Scrap—
Keep it Moving

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AND AIR CONDITIONING



JUNE, 1953
VOLUME 8, NO. 9

CONTENTS**FEATURES**

Double-Duty Crane	61
Better Material Handling Will Slash Post Office Costs	62
Floor Lines Cut Plant Losses	64
Bulk Material Goes Where & When You Want It By Remote Control	66
Efficient Two-Story Warehousing	70
Industrial Wheels	73
Handling Controls Provide Precision Timing	78
High Capacity Storage for Low Ceiling Areas	80
Cost-Cutting Ideas	84
Show Addenda	88
Engineering Data Page	92

PACKAGING & SHIPPING SECTION

What's New In Packaging & Shipping Equipment	109
Here's How to Package Fragile Products	111
Packaging for Preservation	118
New Ideas In Packaging	122

DEPARTMENTS

Advertiser's Index	169
Association and Society News	26
Classified Advertisement Section	168
Highlights of the Month's News	33
Letters to the Editor	8
Literature Featured in Ads	48
Men in the News	32
News from the Sales Field	12
News, Views & Trends	18
What's New in Equipment	40
What's New in Useful Free Literature	134

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Published Monthly

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CUT TIRE COSTS

Get longer service with less trouble—
specify the right tire for each specific job!

Goodyear never has to sell you a makeshift—
because Goodyear builds a *complete* Industrial
Tire line—each unit in it designed *expressly* to
do its specific jobs superlatively well.

That's why you'll save money—year in, year out
—specifying GOODYEAR in exactly the type
tread and size that's best to meet *your* problems.

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INDUSTRIAL TIRES

We think you'll like THE GOODYEAR TELEVISION PLAYHOUSE—every other Sunday—NBC TV Network

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JUNE, 1953 • FLOW



- ...use in narrow aisles and congested areas?
- ...jobs where driver gets on and off frequently?
- ...fast handling at all times?
- ...loading road trucks and freight cars!

If your answer is "YES" to any question, look at these plus features of the

NEW Elwell-Parker "Cargo Scout"

ELECTRIC OPERATION—means power costs are only pennies per day. No vulnerable clutch and reciprocating parts to wear out. No battle with exhaust fumes. Noiseless operation does not interfere with inter-com systems.

UNIT ASSEMBLY—cuts repair time. All parts instantly accessible for lubrication or repairs. Major assemblies are completely independent, permitting swift removal for bench repair.

END CONTROL—fast, easy and safe for operators who must get off the truck frequently. Stand-up operation keeps the driver alert, provides better vision.

CONTACTOR CONTROL—insures fast, smooth starts and instant response to operator's demands. Just one handle controls speed and direction. Contactor controls are easier to maintain.

360° STEERING—plus a short, 57" turning radius for close-quarters operation. Truck trailer and box car loading is faster. Small size elevators no longer a problem. Special device completely eliminates steering wheel kick-back.

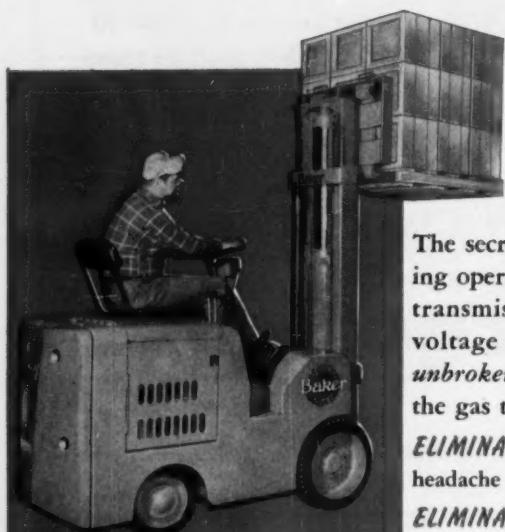
TELESCOPING UPRIGHTS—permit use of all available storage area. 100" of lift with only 68" overall height with uprights retracted and a full 50" of free lift.

"Cargo-Scout" = famous E-P dependability
plus Remarkable Maneuverability

GET ALL THE FACTS; write The Elwell-Parker Electric Co., 4236 St. Clair Avenue, Cleveland 3, Ohio.

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POWER INDUSTRIAL TRUCKS
Established 1893

NEW BAKER gas-O-matic NEW TRUCK PERFORMANCE...



gas-O-matic

is a revolutionary new gasoline-powered fork truck with electric motor drive—designed from engine to drive wheels to incorporate the best features of both gas and electric trucks.

The secret of its outstanding performance and amazing operating economy is the new Baker GAS-O-MATIC transmission system. A specially designed variable voltage generator provides an incredibly smooth *unbroken* acceleration curve—directly controlled by the gas throttle.

ELIMINATION OF CLUTCH cures the biggest maintenance headache of gas-powered trucks.

ELIMINATION OF CLUTCH AND GEAR SHIFT prevents jerky starts and "step-ladder" acceleration.

ELIMINATION OF CONTROLLER AND RESISTANCE BANKS of electric and gas-electric trucks means fewer moving parts and results in less down time and lower maintenance costs.

gas-O-matic

will do everything a comparable straight gas truck can do—do most of it better and more economically . . . plus some things that straight gas cannot do.

It will do almost everything a battery-powered fork truck can do—and some of it better . . . plus a few things that battery-power cannot do!

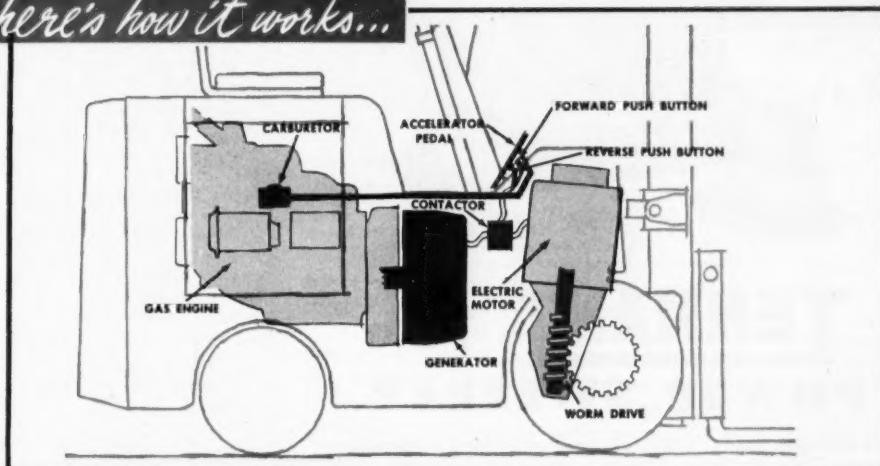
—Yet it costs little more* than a straight gas truck of the same capacity, and only about half as much as a battery-powered electric with charger and two batteries!

* gas-O-matic model illustrated, 4,000 lb. capacity costs only \$4895.00



CHALLENGES THE FIELD! .. NEW OPERATING ECONOMY!

here's how it works...



THERE IS NO CLUTCH AND NO GEAR SHIFT

Travel speed is controlled *entirely* by accelerator-pedal connected to carburetor of gas engine.

Engine speed determines voltage output of generator and speed of drive motor.

No electric controller needed.

Direction of travel is selected by foot operated push buttons.

Hands are free for steer, lift and tilt.

gas-O-matic ELECTRIC TRUCK OPERATING ECONOMY
...GAS TRUCK INITIAL COST!

write for descriptive Bulletin No. 1344

THE BAKER-RAULANG COMPANY
1219 WEST 80TH STREET • CLEVELAND 2, OHIO

The Baker-Lull Corporation, Subsidiary, Minneapolis, Minnesota
Material Handling and Construction Equipment

Baker

industrial trucks



IN 24 SECONDS one man can tilt and dump fully loaded dirt hopper.



CAR-TYPE FEATURES, like automotive steering, allow fast easy handling. Note rugged construction.

TENNANT POWER SWEEPER

MODEL
75

Here's a sweeper built to keep paying for itself for years—the new fast-sweeping TENNANT Model 75.

Use it on tough round-the-clock jobs and see the difference that heavy-duty design makes. Fast, clean sweeping... quick dumping... and extra years of service with minimum downtime.

- 1 **SWEEPS FASTER.** Top capacity exceeds 100,000 sq. ft. per hour (with sidebrush and 6' overlap). Safe; drives like a car. Does clean job.
- 2 **DUMPS MECHANICALLY.** Ratchet lever dumps fully loaded hopper in 24 seconds or less. Saves time; operators like it. Easy to use.
- 3 **HIGHLY MANEUVERABLE.** Turns in only 60" radius (with or without sidebrush). Has instant reverse, rear wheel steering, positive braking action. Saves valuable time.
- 4 **HANDLES BULKY DEBRIS.** Over 11" front clearance of frame. For easier pickup of cartons, sweeping ramps, etc. Write for details.



ELECTRIC sweeper is quiet, economical. Write for special bulletin.



COMPACT 29" wide sweeper (Model 24) has many uses, does fast, clean job.



G. H. TENNANT CO.
2576 N. 2nd Street
Minneapolis 11, Minn.

Offices in Principal Cities

INDUSTRIAL FLOOR MACHINES

CREATORS OF THE TENNANT SYSTEM OF FLOOR MAINTENANCE—MANUFACTURERS OF EQUIPMENT AND MATERIALS FOR MAINTENANCE OF FLOORS, DECKS, ROOFS, HIGHWAYS

Circle No. 33 on Reader Service Card for more information

...and built for
YEARS of service!



Old FLOW Issues Live On

To FLOW:

In glancing through an old issue of FLOW I have come across an item which is of particular interest to me. On page 103 of the November 1951 edition is an article entitled, "Obliterating Ink." I would appreciate any information that you can give on this subject.

E. F. Debreczeni
Radio Corporation of America

It is gratifying to note that articles in FLOW continue to prove useful to readers many months and even years after they were originally published. Reader Debreczeni will receive the information he seeks directly from a company best qualified to assist with his problem.

Reprints Are Popular

To FLOW:

Please send me a copy of the article entitled, "How Good Are Your Shipping Containers?" It appeared on page 109 of the January issue of FLOW.

David C. Miller
General Electric Co.

As in every request for reprints of FLOW articles, we were happy to fulfill Reader Miller's inquiry.

Gripper Sling Inquiry

To FLOW:

We understand there is a company that produces a round braided metal covering which is used to lift various objects. As an example, to lift a 4-inch diameter tube, the braided covering is placed around the tube and as tension is drawn it tightens so that the greater the pull, the tighter the grip. We recall reading an article

moving granular material in bulk?



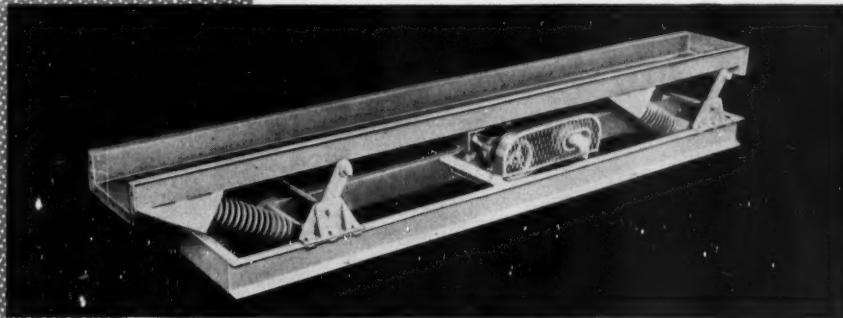
YOU'LL MOVE MORE—
AND *Save* MORE
with a
G-W OSCILVEYOR

Here's the *right* way to move that hard-to-handle material in bulk—whatever it is—without danger of leaking, spilling, or overflow...much more economically, too.

The G-W Oscilveyor is a vibrating trough conveyor that moves material in a steady flow by short forward movements of the trough (from 600 to 800 cycles per minute, depending on the material). It's self-cleaning, comes in a variety of lengths to suit the installation, and can handle a wide range of materials with minimum segregation and breakage.

Available in either ordinary steel, stainless-clad, or all-stainless steel, the Oscilveyor is one of the latest developments of Gifford-Wood's more than 139 years experience in *engineered* materials handling. And because it's engineered, you can be sure that every part, every function, is designed with an eye to efficiency ... for the utmost in operating economy.

Want more information? We'll gladly send a data sheet and show you how G-W Oscilveyors can do a real job for you. Write today.



*When you think of ENGINEERED materials handling...
think of GIFFORD-WOOD*

GIFFORD-WOOD CO.

Since 1814
HUDSON, NEW YORK

420 Lexington Ave. Railway Exchange Building 565 W. Washington St.
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9947

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FLOW • JUNE, 1953



**EVERYTIME YOU MANHANDLE A PACKAGE
YOU ADD TO THE COST OF YOUR PRODUCT
AND NOTHING TO THE VALUE**

The answer is simple—
put your packages on conveyors—
put them on **ALVEY** Conveyors

An experienced Alvey Engineer is available to confer with your technical staff in reviewing your present conveyor system and package handling methods. There have been many interesting cost saving devices and ingenious innovations developed recently in package handling equipment that may have application in your plant. Do call in an Alvey materials handling expert. No obligation, of course.

ALVEY Conveyor Mfg. Co.
9299 Olive Street Road
St. Louis 24, Missouri

If you wish to discuss a conveyor problem with an Alvey Engineer, please write for an appointment.

ALVEY

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10

LETTERS

Continued.

on this product and hope that you can identify it and its manufacturer.

H. L. Sprinkel
Metal Carbides Corporation

Reader Sprinkel has been referred to several manufacturers who can readily analyse his requirements and recommend the proper equipment.

"Who-made-it" Mystery Solved

To FLOW:

We need a little reliable FLOW advice. A customer has asked us to obtain for him a couple of hand trucks on which the axle is supported by swing brackets. He says no name plate appears on the truck, but he thinks it is called "Float-A-Way" and comes with 10" rubber wheels. The floating axle idea is especially helpful when unloading as all the operator must do is lift the frame of the truck. Can you give us any advice as to the name of the manufacturer.

William Robbie

Robbie Industrial Supply Co.

We have checked our trade name files and advised Reader Robbie of the manufacturer who makes the *Float-A-Way* truck.

Pneumatic Conveyor Ideal

To FLOW:

I would like to secure information on the pneumatic transport of dry pulverized material, and I would appreciate your advising if you know of any manual that could be obtained which will answer the problems encountered in this sort of work. This would involve the size of the blower and horsepower required for moving materials of various densities over different distances, the duct sizes, cyclone velocity, etc.

George E. Rahn

J. B. Sedberry, Inc.

Reader Rahn's letter was turned over to us by our sister publication, *APPLIED HYDRAULICS*. We have directed him to several manufacturers of pneumatic conveyor equipment whose literature and manuals should answer all his problems on the movement of dry pulverized material.



ROLLING ALONG WITH THE GREATEST NAMES IN INDUSTRY

...and on the smo-o-o-hest Aerol wheels and casters...the new Aerol Individually-suspended Shock-absorbing caster rig that provides gentle *load-glide* on uneven surfaces. Full 360° swivel and shock-absorbing in both forward and trailing positions. Casters and wheels are lubricated for life and permanently sealed, are applicable to all truck and dolly uses, and are "job engineered." Coil suspension springs are easily changed to meet new requirements.

Industry rolls more smoothly on Aerol wheels, and at the same time reduces maintenance costs. There's an Aerol wheel for every material handling job. Write today for descriptive catalogue, or call the Aerol distributor in your community.

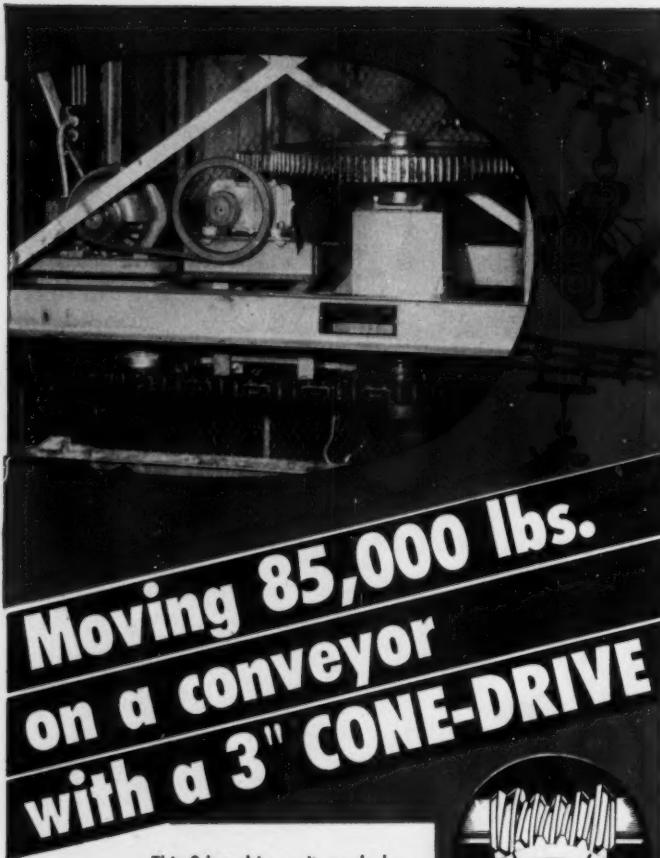
ROLL WITH

aerol WHEELS

AEROL CO., INC., 2424 SAN FERNANDO RD., LOS ANGELES 65, CALIF.

Branch offices and warehouse in Chicago, Detroit, Cleveland and New York • Representatives in all other major cities—consult your classified phone book.

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Moving 85,000 lbs. on a conveyor with a 3" CONE-DRIVE

This 3-hp. drive unit, made by General Conveyors Corp., Van Dyke, Michigan, for a 1500-ft. long monorail conveyor, carries half the load of moving 170,000 pounds of V-8 automotive engines hour after hour, month in and month out. It's the kind of modern installation that demands continuous trouble-free operation.

That's why General Conveyors engineers specified standard 3-in. center distance, 15 to 1 ratio, Cone-Drive speed reducers for each of the two synchronized drives.

The ruggedness and maintenance-free long wear life of standard Cone-Drive reducers make them 'naturals' for conveyor drives. In addition, original units or replacement parts for these units can be delivered off-the-shelf for any emergencies.



Standard enveloping Cone-Drive gears and reducers have greater contact gear teeth, more teeth in contact, increased load capacity, greater shaft load capacity, longer life, lighter weight, and lower overall cost.

Ask for
"Standard Gears of Use in Material Handling," Bulletin 5100-22 for more
detailed information.



news from the
SALES FIELD

Osgood-General has appointed George N. Volz as division sales manager for the northwestern states and provinces of Canada. Volz is widely known in northwestern contracting and logging circles. Working along with him will be John Bernhardt, newly appointed division service representative, who will make periodic check-up calls on Osgood-General owners in the territory.



G. N. Volz



F. J. Hartley

Harnischfeger Corp. has announced the appointment of Fred J. Hartley as special hoist representative for its southeastern territory. Headquarters will be located at Birmingham, Ala. Hartley formerly was district manager in the same area for the Shaw Box division of Manning, Maxwell & Moore Inc. and has over 10 years experience in the material handling industry.

Five new district appointments have been made by U.S. Rubber Co., according to H. C. Oliver, sales manager of the U. S. Tire division. Edwin V. Murphy has been assigned to St. Louis; Harry E. Collins, to Minneapolis; Harold U. McGee, to Oklahoma City; Wilburn B. Hooper, to San An-

Big Yard... or Back Lot...

BELOW...

a large auto plant handles large bundles of car frames with their 20-ton Lorain Self-Propelled crane, Model SP-414.

AT RIGHT...

bulky steel tanks are stockpiled in the yard of a welding plant by 15-ton Lorain-TL Self-Propelled crane, Model SP-254W.



**LORAINS
ON RUBBER
SAVE
MONEY!**

- Take a close look at the two photos. Both are yard storage operations of big, bulky materials. One yard has roadways paved with concrete. The other has winding dirt aisles in a weed-grown lot. One company is a giant automobile manufacturer — the second, a small welding plant.

- Mobile, rubber-tire Lorain Self-Propelled cranes are saving time and money for each of these plants, proof that any plant can cut costs and handle more materials the Lorain Crane way. Paved yards — or "back lot" — if material must be unloaded, loaded, stored or transported, a rubber-tire Lorain can fit your material handling problem.

- Savings start with men — one man at the controls of a Self-Propelled Lorain does the work of a crew; rubber-tire mobility takes the Lorain all over the yard quickly; air steering and air brakes add to ease of operation and maneuverability; 16 or more front-end lifting attachments handle any size, shape or type of material. Uses are unlimited — and there's a saving with every use!

Ask your local **Thew-Lorain Distributor** for complete information.

**THE THEW
LORAIN**

THE THEW SHOVEL CO., LORAIN, OHIO

FLOW • JUNE, 1953

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SALES FIELD

Continued

Announcing the

LIVE RAIL

ALVEY-FERGUSON CINCINNATI, OHIO

A NEW, BASIC SYSTEM OF WHEEL CONVEYOR
FOR LOWER COST
PRODUCT MOVEMENT



ALL STEEL — BUT LOOK HOW LIGHT!

This is one of the new A-F Live Rail units — a stable, complete-in-itself, conveyor unit. It is available in 5' and 10' lengths and 45° and 90° curves with 4 or 8 wheels per foot, or in completely assembled conveyor sections of 2 to 4 rails in 18 standardized wheel patterns ranging from 7½" wide, 8 wheels per foot, to 16½" wide, 32 wheels per foot.

Most versatile of all pieces of

equipment, Live Rails can be quickly combined or re-combined by anyone in any standard or special wheel pattern — or width — for portable or fixed installations.

A unit, basic in concept, Live Rails are designed to fit your present and future needs for standard or special conveyors or for a wide variety of other uses ranging from "live" storage racks to special dollies.

FOR PORTABLE WHEEL-TYPE CONVEYORS OF MINIMUM WEIGHT — MINIMUM COST

QUICK, EASY TO USE

Just drop "rails" into place
on any Live Rail stand — in
any pattern you need.
That's all there is to it.

ASSEMBLED SECTIONS TOO

Any standard assembled section fits any Live Rail stand.

• Write for our illustrated folder
"A New Concept in Movement".



ANOTHER
FIRST FOR

ALVEY-FERGUSON
OF CINCINNATI

THE ALVEY-FERGUSON COMPANY
First in the Field of Product Handling — Since 1901
439 Disney Street Cincinnati 9, Ohio

Circle No. 76 on Reader Service Card for more information

tonio, and J. C. Barrows moves up from salesman to assistant manager at Atlanta. Hooper's post also is assistant manager while the others are all district managers.

Appleton Electric Co. has announced the appointment of John O. Bell Jr. as district sales manager for the entire state of Texas. His headquarters will be at Houston. He has been with Appleton for the past five years as sales engineer in the southeast Texas territory.



J. O. Bell, Jr.

Robert H. Helm has been appointed sales manager of the New York branch office of **Yale & Towne Mfg. Co.** He joined the firm in 1952, and formerly was vice president of Brodie Industrial Trucks Inc. Prior to that he was associated with Clark Equipment Co. and C & D Batteries Inc.

Allis-Chalmers Mfg. Co. has announced the establishment of a new regional area with headquarters in Denver. Richard D. Moody, who has been manager of the Los Angeles office since 1950, is in charge of the new region. Included under his supervision will be branch offices at Salt Lake City, Phoenix, El Paso, and Spokane. Announcement of the change was made by C. W. Schweers, vice president and director of sales for the company's general machinery division.

The Powers Wire Products Co. has moved its offices from Los Angeles to new quarters at 1590 Monterey Pass Road, Monterey Park, Calif.

(Continued on page 94)

Rubbish Disposal is only ONE of the Cost Cutting jobs for the Dempster-Dumpster in your plant...



It's amazing, almost to the point of fantasy, yet so soundly real, what the minds of men in all types of industry have cooked up for more efficiency and reduced costs with the Dempster-Dumpster.

Hundreds of plants are handling materials of practically every description with one truck-mounted Dempster-Dumpster serving scores of detachable containers. Here are just a few. Oils, gases, and liquids handled in our Tank Type Containers . . . tools and equipment in our Tool Shed Type Container . . . containers on casters placed for receiving steel chips from lathes or at conveyors for receiving finished products . . . container with doors and windows, replacing shack for plant guards or nightwatchmen . . . containers built to handle chlorinator ash residue of approximately 1500° F. and there are dozens more.

Containers are placed wherever material accumulates. When loaded each is picked-up, hauled and emptied (as illustrated above) . . . or load set down intact. The entire op-

eration is handled by only one man, the driver, by hydraulic controls in cab.

The containers are built in capacities up to 12 cu. yds. and each is designed to suit the materials to be handled—be they bulky, light or heavy . . . solids, liquids or dust.

One Dempster-Dumpster, with driver, does the work of 3 to 5 conventional trucks . . . eliminates trucks and crews standing idle . . .

eliminates rehandling of materials and increases efficiency and good plantkeeping.

If you have even any remote idea that this equipment could be adapted to your operation, by all means contact us because being without the Dempster-Dumpster System could easily be costing your company thousands of dollars annually. Manufactured and sold exclusively by Dempster Brothers, Inc.



DEMPSTER BROTHERS, 663 Shea Bldg., Knoxville 17, Tenn.



From this control board, 1 man measures, mixes, moves sand for casting molds

One man, alone at this Westinghouse control board, regulates the flow of sand used in making cores for cylinder blocks at the Ford plant near Cleveland. Watching the lighted board, he delivers the sand, through pipelines, into storage bins above any one of 38 core-blowing machines.

Instant control from one location

Westinghouse has put the control of an entire sand distribution system in the hands of one competent man and his electronic partner. The operator, with total responsibility, sends sand where the panel tells him it's needed. Ford's control board is conveniently located in an out-of-the-way place. Westinghouse could put *your* control board, just as satisfactorily, in your office.

Six assistants—not on the payroll

The master board flashes orders to six unattended Westinghouse Control Centers scattered through-

out the plant. Each control center has micro-flex counters and timers which regulate the mixing machinery. Sand, bond, oil and water, in precise proportion, are whipped into one-ton batches. Then Crane Company's Turbo-Drive pneumatic sand distribution system blows the prepared batch of sand through 4" piping to storage bins over the core-blower machines—all in 70 seconds.

Next time call Westinghouse

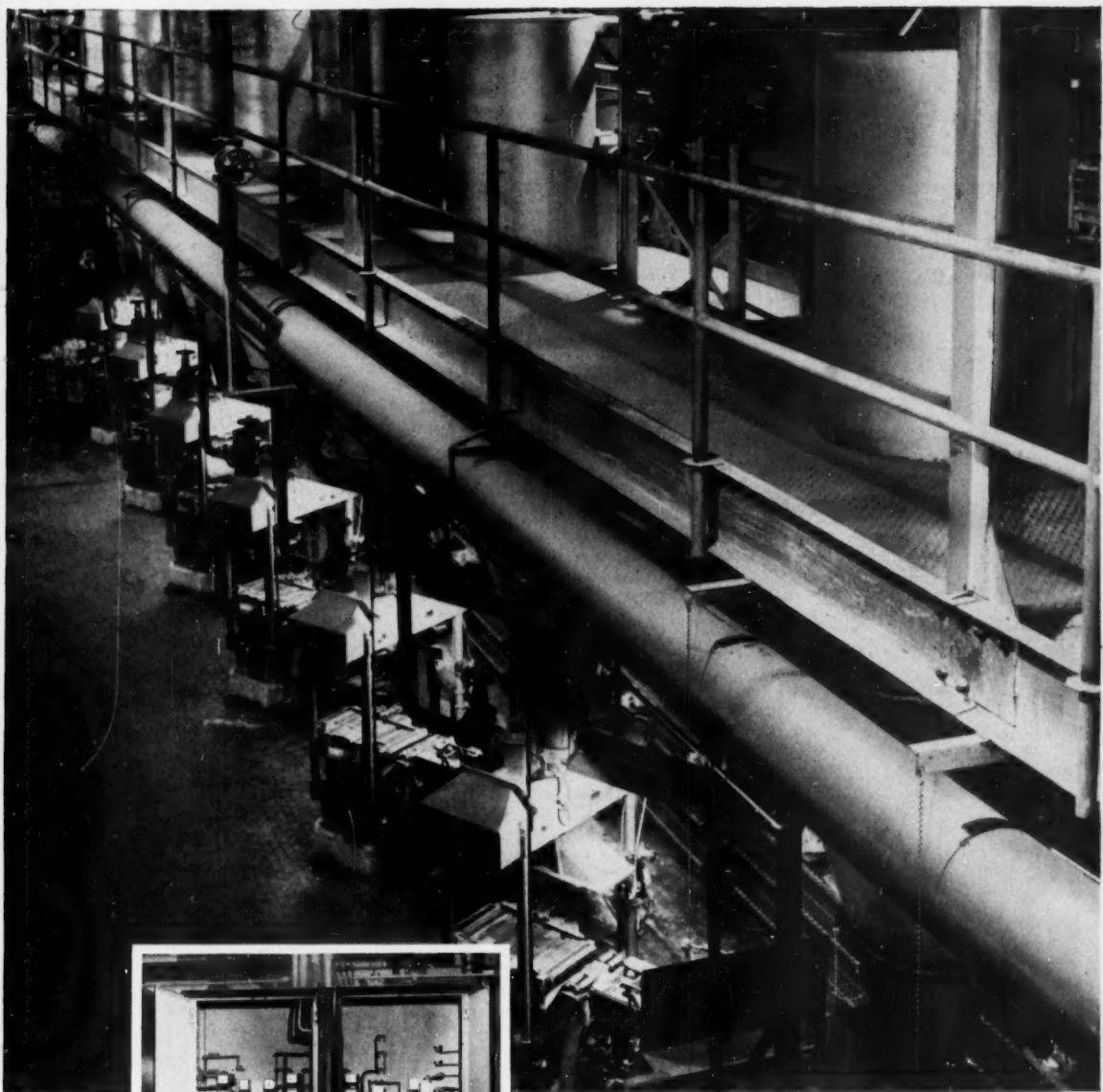
This Westinghouse control system has netted Ford a saving in man power and in maintenance and production costs. Cylinder block production is up and still climbing. Perhaps Westinghouse equipment, designed for your job, and Westinghouse engineering help, from first plans to final tests, could improve your operation, too. Your nearby Westinghouse representative will be glad to talk to you. Call him early in the planning stage. Westinghouse Electric Corporation, Pittsburgh 30, Pennsylvania.

J-94991

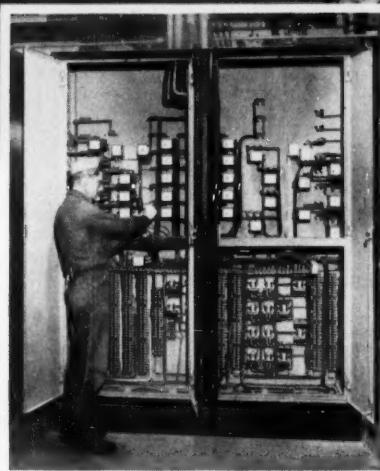
YOU CAN BE **SURE**...IF IT'S
Westinghouse



Circle No. 52 on Reader Service Card for more information



30 tons of sand per hour are fed by a pneumatic system to storage bins over machines.



Wide opening rear doors on the master control board make the plant electrician's job easier.

NEWS VIEWS TRENDS

CLARK PURCHASES ROSS CARRIER

Clark Equipment Company has formally acquired all the capital stock of The Ross Carrier Company of Benton Harbor, Mich., according to George Spatta, Clark president. Michigan Power Shovel Company, a subsidiary of Ross Carrier, is included in the transfer. Production and administration of both Ross Carrier and Michigan Power Shovel will be integrated with activities of the Clark organization, and the move will enable Clark to add power shovels, cranes, draglines and related equipment to its line of industrial trucks.

TELAUTOGRAPH ANNOUNCES PURCHASE

Louis R. Kurtin, Chairman of the Board of TelAutograph Corporation, has announced the completion of negotiations for the purchase of Electrotechnic Corporation of Azusa, California. Purchase of Electrotechnic's facilities will augment TelAutograph's research and manufacturing capacities and will supplement the electronic manufacturing operations of the concern. Electrotechnic will operate as a wholly-owned subsidiary of TelAutograph.

CONFERENCE REPORT FROM SAFE TRANSIT

The National Safe Transit Committee's first industry-wide conference in Chicago was attended by more than 300 persons. They heard leading representatives of manufacturing companies and carrier groups tell how their organizations had benefitted through adoption of the Committee's voluntary, cooperative and non-profit preshipment testing program. Featured on the program were "case histories" presented by representatives of participating companies. Also on the program was a movie which explained test procedures in full and the test shipments which led to their adoption.

ANACONDA SHARES MAGNET WIRE CONTAINER

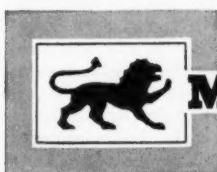
The Anaconda Wire & Cable Company has granted its competitors the privilege to use the molded magnet wire container which it developed. All manufacturers are free to use the container themselves, for shipment of their own magnet wire products. This is the container which won first prize at the Seventh Annual Industrial Packaging & Materials Handling Exposition in Chicago, and is made of form-fitting molded fibre.

SCHOLARSHIP ESTABLISHED

The Yalz & Towne Manufacturing Company has established a full tuition scholarship for a beginning student in industrial design at the Philadelphia Museum School of Art. The award, to be known as the Yale Materials Handling Scholarship, will be given by the scholarship committee of the school on the basis of merit and need.

NEW ADDRESS

Rexford Paper Company has moved to its new offices and factory building at 3100 West Mill Road, Milwaukee. The new telephone number will be Flagstone 1-8150 and the new teletype number will be MI-243. The Rexford railroad siding will be located on Chicago, Milwaukee, St. Paul & Pacific Railroad.



THE
MONARCH
 RUBBER COMPANY
 HARTVILLE, OHIO

SPECIALISTS IN INDUSTRIAL SOLID TIRES AND MOLDED MECHANICAL RUBBER GOODS

Circle No. 25 on Reader Service Card for more information

NEWS, VIEWS, TRENDS

Continued

BUDA COMPLETES NEW PLANT FACILITIES

The Buda Company has completed new plant facilities to increase production of its line of fork trucks. According to Ralph K. Mangan, president, the new facilities will step up deliveries to double the previous rate. Also announced was the appointment of Waldie & Briggs Inc. to plan and direct the program of advertising and sales promotion.

RAPISTAN CUTS CONVEYOR PRICES

The price of the Rapid-Wheel gravity conveyor was lowered an average of 6 percent by The Rapids-Standard Company. The decrease applies to all regular five and ten foot straight sections in 12 and 18 inch widths. This is the second wheel conveyor price cut announced by the company in the last six months.

WALTER MAGUIRE OPENS NEW MILL

A new mill to produce emery aggregate was opened at Peekskill, New York, by Walter Maguire Company, Inc. The new mill was designed and built for the sole purpose of processing natural emery into aggregate for heavy-duty flooring. The reason given for the selection of emery as a material for the aggregate was its content of aluminum oxide for hardness, iron oxide for toughness and other properties which provide a nonskid, non-absorbent surface.

NAME CHANGE FOR CRANE FIRM

Paul W. Pearson, president of the Industrial Equipment Company, Chicago, has announced the firm name has been changed to Industrial Crane & Hoist Corporation. The firm name has been changed to better identify the company with the cranes, runways and hoists that it engineers and manufactures.

LONGEST BELT NOW OPERATING

The world's longest, single-flight, rubber and fabric constructed conveyor belt has been put into operation between the coking plant and blast furnaces at U. S. Steel's new Fairless Works in Morrisville, Pennsylvania. Built by Goodyear Tire & Rubber Company, the belt measures 5500 feet from the center of the head pulley to the center of the tail pulley. The belt is four feet wide and is constructed of specially-compounded synthetic rubber and rayon fabric.

FEMCO COMPLETES NEW ELECTRONIC PLANT

Farmers Engineering and Manufacturing Company has announced the completion and opening of a new plant at Irwin, Pennsylvania, for the manufacture of products for electronic communication and control. The move is said to follow the current trend to locate out of congested city areas. The new plant consists of seven acres located near the Irwin interchange of Route 30 and the Irwin entrance of the Pennsylvania Turnpike.

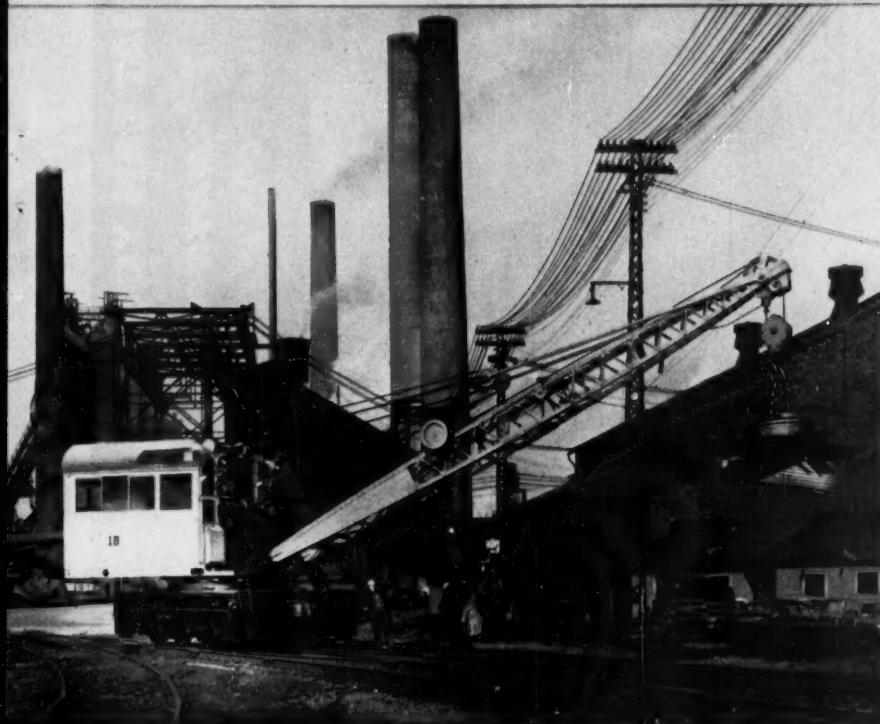
GUMMED TAPE IS PROMOTED

Manufacturers of gummed sealing tape, under the leadership of Philip O. Deitsch, managing director of the Gummed Industries Association, are participating in a cooperative industry effort to promote the advantages of this tape. Ads in business publications will attempt to make management aware of the huge shipping losses industry suffers each year and point out that much of this can be avoided through use of the proper package closure.

Circle No. 121 on Reader Service Card for more information 
JUNE, 1953 • FLOW

This BROWNING 30-Ton Diesel-powered locomotive crane with 55-inch magnet, is one of ten Brownings on the job at a large midwestern steel plant. This company uses Brownings for all crane operations—ore and scrap handling, coal loading, car switching and maintenance work.

You can't beat
BROWNING'S
on these jobs



Browning builds the only complete line of heavy-materials handling cranes

• If it's crane work there's a Browning built to do it . . . efficiently, economically and dependably. That's because Browning models are designed to do specific jobs for specific industries—and they're built to stay on the job.

Write for complete specifications on the Browning model designed for your job.

Browning's half-century of specialized experience devoted exclusively to crane manufacturing, and Browning's well-known rugged design and construction are your best assurance that you can't go wrong with a Browning on the job.

WAGON CRANES

2 Models
17½ to 25 Tons
25 to 100 Ft.
Booms



TRUCK CRANES

5 Models
8 to 30 Tons
25 to 120 Ft.
Booms



LOCOMOTIVE CRANES

3 Models
25 to 50 Tons
50 to 135 Ft.
Booms



THE BROWNING CRANE & SHOVEL CO.
Dept. C • 16226 Waterloo Road • Cleveland 10, Ohio

HEAVY FREIGHT HANDLING



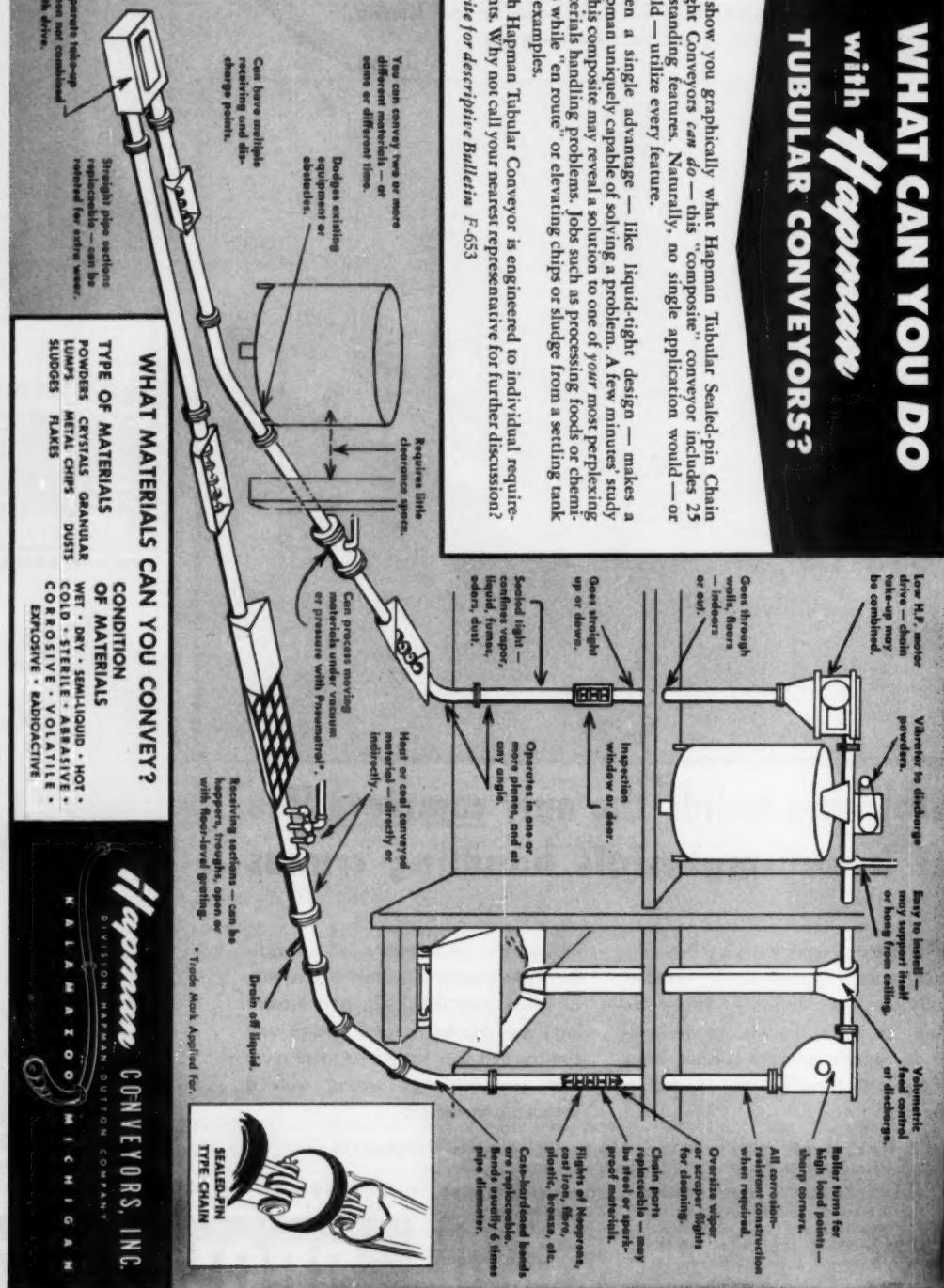
BROWNING
LOCOMOTIVE, WAGON,
TRUCK AND CRAWLER
Cranes

WHAT CAN YOU DO with *Hapman* TUBULAR CONVEYORS?

To show you graphically what Hapman Tubular Sealed-pin Chain Flight Conveyors *can do* — this "composite" conveyor includes 25 outstanding features. Naturally, no single application would — or could — utilize every feature.

Often a single advantage — like liquid-tight design — makes a Hapman uniquely capable of solving a problem. A few minutes' study of this composite may reveal a solution to one of your most perplexing materials handling problems. Jobs such as processing foods or chemicals while "en route" or elevating chips or sludge from a settling tank are examples.

Each Hapman Tubular Conveyor is engineered to individual requirements. Why not call your nearest representative for further discussion? Write for descriptive Bulletin F-653



WHAT MATERIALS CAN YOU CONVEY?

TYPE OF MATERIALS	CONDITION OF MATERIALS
POWDERS	WET • DRY • SEMI-LIQUID • HOT • COLD
CRYSTALS	COLD
GRANULAR	WET • DRY • SEMI-LIQUID • HOT • COLD
LUMPS	WET • DRY • SEMI-LIQUID • HOT • COLD
METAL CHIPS	WET • DRY • SEMI-LIQUID • HOT • COLD
DUSTS	WET • DRY • SEMI-LIQUID • HOT • COLD
SLUDGES	WET • DRY • SEMI-LIQUID • HOT • COLD
FLAKES	WET • DRY • SEMI-LIQUID • HOT • COLD

Hapman

CONVEYORS, INC.

DIVISION HAPMAN-DUTTON COMPANY

KALAMAZOO MICHIGAN



Circle No. 79 on Reader Service Card for more information

JUNE, 1953 • FLOW

NEW Towing Tractor



COMPACT . . . POWERFUL . . . MANEUVERABLE

TC-60 PAYLOADER TRACTOR With Torque Converter

This compact package of drawbar power brings a new standard of speed, convenience, control and safety to plants, airports, and freight yards . . . to rail, water and truck terminals. The torque converter drive provides smooth application of the tremendous pulling power to get big loads in motion and to handle them fast and safely . . . eliminates the friction clutch and all clutch maintenance. The full-reversing transmission makes available two speed ranges, both forward and reverse, with forward speeds up to 16.9 m.p.h. and reverse speeds up to 19 m.p.h.

Big, powerful hydraulic brakes and low center of gravity permit fast operation—with safety. The turning radius is extremely small . . . the operator can see the drawbar pintle hook from his seat and has unobstructed visibility in all directions for driving and maneuvering.

This "PAYLOADER" Tractor is service-tested and proven . . . is the product of the same engineering and manufacturing experience that developed and builds the widely-used "PAYLOADER" Tractor-Shovels . . . is sold and serviced by the same Hough Distributors with their complete, modern parts and service facilities and trained personnel. If you have towing and pulling problems, write for full information on the TC-60. The Frank G. Hough Co., 945 Sunnyside Ave., Libertyville, Illinois.



FEATURES . . .

- 67 H.P. Engine
- 6,000 Lb. Drawbar pull
- Torque-converter drive
- Full-reversing transmission
- Two speed ranges forward
- Two speed ranges reverse
- Top speed of 19 m.p.h.
- Turning radius 10'1" outside and 34" inside
- Overall dimension only 4'11" high, 9'8" long, 3'6" wide



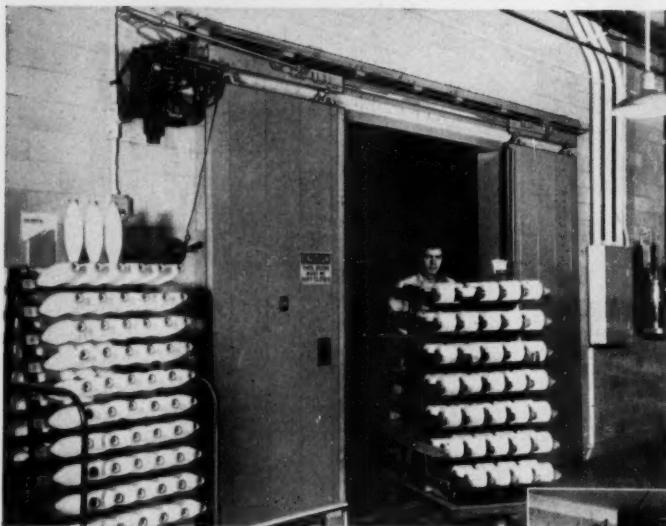
WRITE

for full information and the name of your Hough distributor.

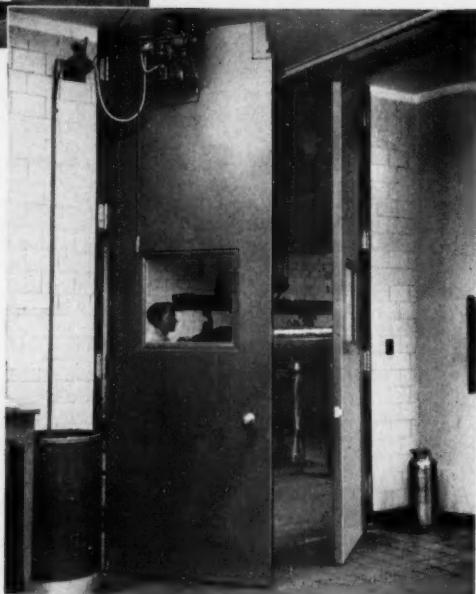


PAYLOADER

Richards-Wilcox Automatic Door Operators



Smoother!
Safer!
More Efficient!



Electronic time-savers for industry

No. 1512 Aut-O-Dor Operator for sliding doors. One operator, No. 1512, can be adapted to bi-parting doors, as shown above, by the addition of a cable attachment for door, not connected to unit. Designed for smaller openings where a pair of sliding doors or a single sliding door is most practical, with maximum opening of 5 feet for single door and 10 feet for bi-parting doors. Supplied in $\frac{1}{4}$, $\frac{1}{2}$, or $\frac{3}{4}$ HP units; single or polyphase AC with overload and underload protection.

No. 1508 Aut-O-Dor Operators for pairs of swinging doors. For low-cost, automatic operation of a pair of swinging doors, the 1508 single operator mounts on one door, but smoothly activates both by a simple mechanical linkage. Standard units have either a cable switch or push button control. Activation by radio, magnets or unseen light beam is optional equipment. Operation from inverted installation or lintel above door may also be obtained. Supplied in $\frac{1}{4}$, $\frac{1}{2}$ and $\frac{3}{4}$ HP units for openings up to 12 feet wide. Operator may be single phase or polyphase AC, overload protection is provided. Doors may be stopped at any point during operation and direction reversed.

For complete information write for descriptive catalogue.

Richards-Wilcox Mfg. Co.

A HANGER FOR ANY DOOR THAT SLIDES™

420 THIRD STREET, AURORA, ILLINOIS

Circle No. 71 on Reader Service Card for more information

1880



1953

SLIDING DOOR HANGERS & TRACK • FIRE
DOORS & FIXTURES • GARAGE DOORS & EQUIP-
MENT • INDUSTRIAL CONVEYORS & CRANES
• SCHOOL WARDROBES & PARTITIONS •
ELEVATOR DOOR OPERATING EQUIPMENT

JUNE, 1953 • FLOW



AFTER ONE YEAR on the floor of this warehouse, "Scotch" Plastic Tape looks as good as when it was first applied (above)!

FAST! No drying-time when you mark lanes with tape!

...and tape lasts 5 times longer!



CARL JANNE

Carl Janne, storekeeper, New York State Electric & Gas Co., Elmira, N. Y., writes: "After one year, the lanes we marked with

'Scotch' Plastic Tape look nearly as good as the day we put them down. For my money, this tape is the way to mark off lanes in any warehouse. It goes down fast, and continues to look good after hard use."

No wonder "Scotch" Plastic Tape is faster and easier to apply! There's no drying-time to slow down operations—no special equipment

needed. Just put it down and roll it in place. Adhesive sticks *tight* at a touch. And the more you walk on it, the *tighter* it sticks.

And no wonder this tough tape lasts 5 times longer than conventional materials! The abrasion-resistant plastic backing isn't affected by acids, oils, greases, alkalies, water, salts and common solvents.

Try it yourself and see! Available in eight easy-to-match colors, many widths. For more complete information, write us on your letter-head, Dept. F-63, St. Paul 6, Minnesota.



The term "Scotch" and the plaid design are registered trademarks for the more than 200 pressure-sensitive adhesive tapes made in U.S.A. by Minnesota Mining & Mfg. Co., St. Paul 6, Minn., also makers of "Scotch" Spool Protection Tape, "Undercoat" Rubber Coating, "Scotchlite" Reflective Sheeting, "Safety-Walk" Non-slip Surfacing, "3M" Abrasives, "3M" Adhesives. General Export: 122 E. 42nd St., New York 17, N. Y. In Canada: London, Ont., Can.

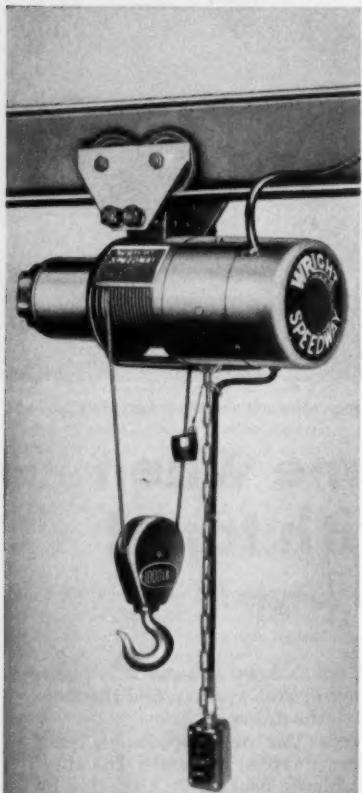
Circle No. 146 on Reader Service Card for more information





Wright Speedway Hoists

Why **WRIGHT** Speedway Hoists Last Longer . . .



• 5 key features of **WRIGHT** Speedway Hoists mean longer life and less servicing. These features are heat-treated and surface-hardened alloy steel gears, hard alloy silver electrical contacts in controller, heavy duty crane type safety limit stop, automatic multiple disc load brake and ball bearing gear shafts.

And there are other features which add further to the fine service you get from a **WRIGHT** Speedway Hoist. For instance—grooved cable drum, improved plow steel preformed cable, concealed motor wiring, and completely enclosed, ventilated housing weather-proofed for permanent outside use. Ball and roller bearings seldom require additional lubricant. Gear train is sealed in oil bath chamber.

You can get standard lift, long lift, or close headroom **WRIGHT** Speedway Hoists in capacities from $\frac{1}{4}$ to 10 tons—all with these same quality features. See your local **WRIGHT** distributor or write our York office for **DH-133-A**. **WRIGHT** will save you money.



WRIGHT HOIST DIVISION
AMERICAN CHAIN & CABLE

York, Pa., Chicago, Denver, Detroit, Los Angeles, New York,
Philadelphia, Pittsburgh, San Francisco, Bridgeport, Conn.

Circle No. 2 on Reader Service Card for more information

26



association
and society
NEWS

• William O. Hildreth was one of eight engineers in the United States to receive a citation for 65 years' membership in the American Society of Mechanical Engineers. Born in 1865, Hildreth is an alumnus



and former faculty member of Massachusetts Institute of Technology. He joined the Lamson Corp. in 1903 and remained with them until his retirement a few years ago. The citation and award were presented by G. I. Vincent of the ASME.

• At the spring semi-annual meeting of Committee D-10 (Containers) of the American Society of Testing Materials held recently, Gordon Falkenau was elected president for the coming year. At the same meeting a commemorative resolution was passed in recognition of the achievements of the late T. A. Carlson, who had been president of the group for the past seven years.

• Taking their cue from the many popular question and answer panels scheduled on radio and TV the Caster and Floor Truck Manufacturers' Association conducted a similar interesting session at a recent meeting prior to the Materials Handling Exposition. Panel members included such Mate-

rial Handling notables as Irving Footlik, material handling consultant at the Illinois Institute of Technology; L. A. Severson, warehousing manager for Central Scientific Co.; A. E. Ward, agent for Chicago, Milwaukee & St. Paul Railroad; Wilbur D. Warner, material handling research division of Sears Roebuck & Co.; Fred Wiley, assistant general supervisor of material handling research for International Harvester Co.; and J. P. Wilger from Swift & Co.

With no holds barred the panel members discussed various materials handling products, how they were made and sold.

• **R. F. Miles**, president of Rathborne, Hair & Ridgway

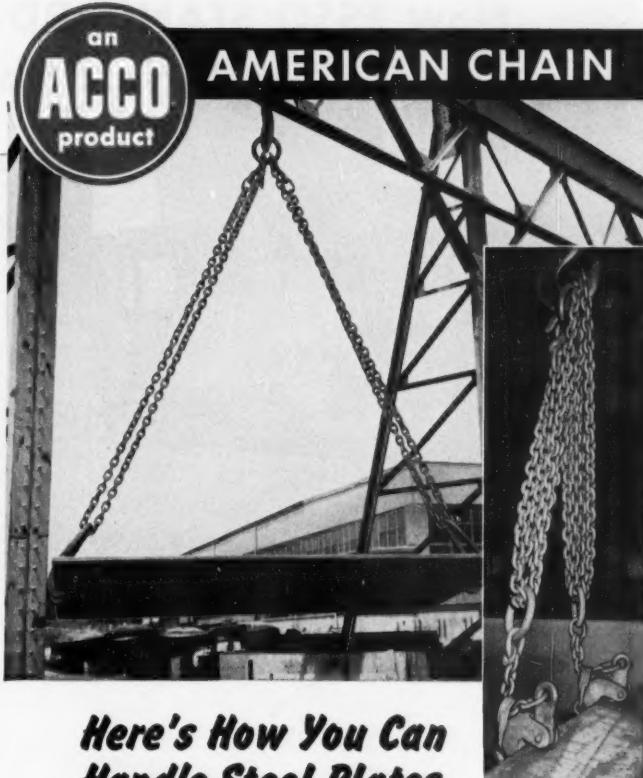


R. F. Miles Box Co., recently was elected president of the National Wooden Box Association. C. D. Hudson was reelected executive vice president and John Galbraith was reelected treasurer. Three vice presidents also were elected. They are Curt F. Setzer, Leslie J. Chaffee and J. D. Bronson.

• **R. C. Wietersen**, director of purchases of the Buda Co. has been elected president of the



R. C. Wietersen Internal Combustion Engine Institute. Membership includes major manufacturers of high speed gasoline and Diesel engines. Other officers elected were vice president, J. E. Heuser, sales manager for Le Roi Co. engine division; secretary, R. H. Kerr, chief engineer for Climax Engine & Pump Mfg. Co.; treasurer, J. D. Cook, secretary-treasurer for Hercules Motor Corp.



Here's How You Can Handle Steel Plates

• These pictures show only two applications of an AMERICAN 125 Endweldur alloy ACCO *Registered* Sling Chain with ACCO series 80 Sling Hooks. The 2 legs are long enough for use with various length plates. They can also be used in a double-basket hitch for lifting two or more plates together.

The big advantage in using this AMERICAN Chain is in the small diameter, light weight, and great strength of the tough alloy chain, and in the short links which make the chain so flexible and easy to rig. See it in the right hand picture above.

Inside the plant this same sling chain is used in a wide variety of lifts on castings, housings, and finished machines. It has become sort of a "jack-of-all-trades."

AMERICAN makes sling chains for every use with ACCO grab, sling, foundry, and special hooks. Note (above) the two ACCO *Registered* Sling Chains on the plate grabs. The ACCO Sling Chain Catalog gives you full information on America's finest chain slings—AMERICAN.

ACCO

Write to our York, Pa., office today
for Catalog DH-314



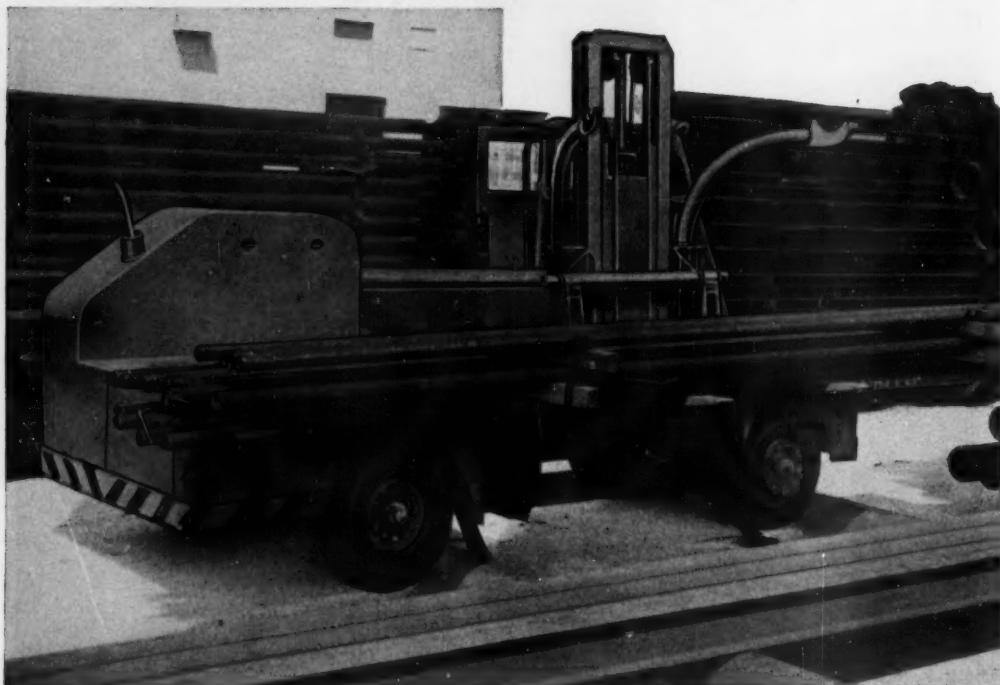
AMERICAN CHAIN DIVISION
AMERICAN CHAIN & CABLE

York, Pa., Atlanta, Chicago, Denver, Detroit, Los Angeles,
New York, Philadelphia, Pittsburgh, Portland,
San Francisco, Bridgeport, Conn.



Circle No. 139 on Reader Service Card for more information

How ESSO STANDARD OIL CO. Speeds Materials Handling



Side-loading Traveloader® Sets New Standards for Speed and Efficiency

Esso Standard Oil Company uses three model T10-G2 Traveloaders continuously in their materials storage yard at Baton Rouge, Louisiana. The Baton Rouge yard has a high turnover of materials including pipes, rails, lumber and many other hard-to-handle items of equipment. Three men each operating Traveloaders can move, stack, and deliver this material with a minimum of assistance from others. This is typical of what Traveloader is accomplishing for hundreds of satisfied users and of what it can do for you. Traveloader operates in a straight line, parallel to its load, in aisles no wider than 10' thereby increasing the storage capacity of a given area up to 50%.

A Wide Variety of Attachments gives Traveloader versatility, flexibility and utility beyond the range of any other materials handling equipment. Traveloader can be used to replace a yard crane, strip steel carrier, multiple pallet mover, fork lift truck and transporter.



Write today and let us send you Bulletin AD-30A containing full details and specifications on this remarkable machine.

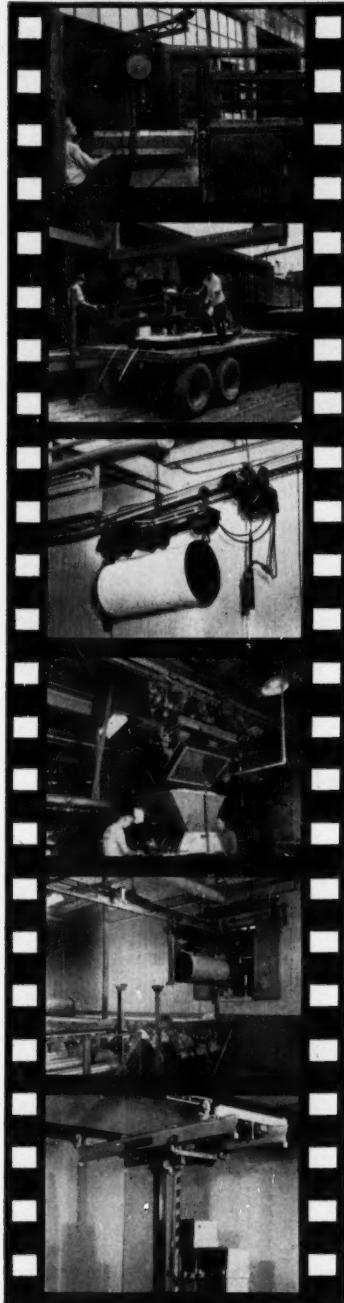
Baker

industrial trucks

THE BAKER-RAULANG COMPANY
1250 WEST BROAD STREET • CLEVELAND 2, OHIO

*The Baker-Lull Corporation • Subsidiary, Minneapolis, Minn.
Material Handling and Construction Equipment*

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Quickly
removes die
blocks from
trucks

Saves \$30
each truck
unloaded

Delivers beams
to another
building

Automatic
delivery of
core sand

Automatic
transfer of
slasher beams

Stacker crane
increases stor-
age by 60%



a 16 mm movie that discusses
handling problems common
to every industry

Before you decide upon any material handling equipment, let us loan you "Up and Over". This 16 mm film shows many installations of American Monorail overhead handling equipment. You will see hand operated to fully automatic systems—one or more that may be particularly adaptable to your operations. The film is educational, interesting, informative and shows the way to economical, safe and time-saving material handling. Your ticket of admission is only a note to us asking for a print. It will help us if you advise the exact date, as close as possible, when you wish to use it.



THE AMERICAN MONORAIL COMPANY

13129 ATHENS AVENUE

Circle No. 92 on Reader Service Card for more information

CLEVELAND 7, OHIO



ENGINEERING REPORTS:



ROTATING-TYPE chargers made by General Electric are adaptable to driver-ride truck batteries of both lead-acid type (6 to 24 cells) and nickel-iron-alkaline type (10 to 32 cells). Light-

weight and compact, they can be mounted on balconies or other supporting surfaces (as with this group of eleven in a San Francisco plant), or stacked in tiers to save space.

Correct charger application helps



FULLY AUTOMATIC rotating-type G-E chargers are easy to operate. Plug in charger, set timer, and automatic control does the rest, shutting down unit when battery is fully charged.



VERSATILE rectifier-type G-E chargers can be adjusted for charging different types of truck batteries, and are fully automatic. Both high and low rates can be adjusted over wide ranges.

Circle No. 14 on Reader Service Card for more information



RECTIFIER-TYPE G-E chargers for lead-acid or nickel-alkaline batteries in driver-ride or driver-lead trucks need no special foundation and are easy to install. Since they occupy very

little space, they can even be located in truck working areas, as in this New York food plant. This permits "on-the-spot" charging, lets you get more working time from your trucks.

maintain production continuity

Selection of the right G-E charger—for the correct plant location—assures top performance of your electric trucks

When batteries are properly charged, your electric trucks keep rolling, materials move fast, and production goes up. But proper charging means selecting the right charging equipment for *your* particular needs. That choice is made easier by General Electric's complete line of rotating and rectifier chargers—backed by skilled G-E application help.

Whether your chargers are to be centrally grouped or spotted throughout your plant—for large fleet needs or smaller operations—the equipment you get from G.E. (1) does the job economically and dependably, (2) is the right equipment for your needs, (3) is more efficiently used because of the recommendations that

accompany it. When you plan for new charging equipment, be sure to contact your G-E Apparatus Sales Representative. General Electric Company, Schenectady 5, N. Y.

669-6

FREE MANUAL ON MATERIALS HANDLING



For your copy of the manual "Materials Handling," part of G.E.'s "More Power to America" program, write on your letterhead for Bulletin GEA-4962. To see the accompanying film, ask your equipment supplier or G-E Apparatus Sales representative.

Engineered Electrical Systems for Materials Handling

Conveyor drives • Crane drives • Hoist drives • Industrial truck drives and battery chargers

GENERAL  **ELECTRIC**

Actual Case Analysis Shows

Bulk Material Handler Saves \$4,530 per month!

with **TOTE** System*

Handling 1,450,000 pounds of bulk material per month, one manufacturer using Tote System equipment reports an actual saving of 30 cents per hundredweight—or a total saving of \$4,350 per month.

Cost of the Tote System installation to handle this material was \$23,150. Thus, this user paid for his equipment out of savings in less than six months.†

Wherever Tote* has been installed—by small as well as large plants handling bulk materials—substantial savings have been reported on container costs, labor costs, storage costs, freight claims, product loss, product contamination and deterioration, and inventory.

Tote—built around easily handled aluminum bins—makes these savings possible because it is a complete, automatic, mechanical system for filling, storing, transporting, discharging, weighing and blending all types of bulk materials, including liquids.

Tote Systems now handle a diverse list of products including sugar, flour, salt, soap, detergents, cocoa, cement, whiting, carbon black, powdered coffee, powdered plastics, fluorescent powders, ethocel, phthalic anhydride, and polystyrenes. Tote is equally effective for in-plant or inter-plant operations.

Tote engineers will survey YOUR plant to determine the savings YOU can effect, at no cost or obligation.

*User's name upon request.

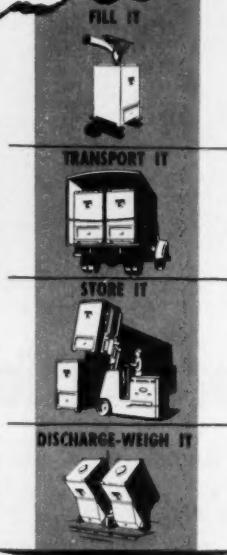
Write for
NEW Illustrated Literature

TOTE

System, Inc. 630 S. 7th
Beatrice, Nebraska

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*Tote and
Tote System
Reg. U.S. Pat.
Off.



MEN
in the news

... at Lamson Corp.

Verne C. Story has just been appointed manager of field operations, according to Robert I. Hicks, Lamson president. He has been with the company for 16 years. In his new post Story will be responsible for carrying out sales policy, plans and the direction of all field personnel in Lamson's 22 field offices.



V. C. Story

... at Flexible Steel Lacing Co.

The company's president, Hugh J. Beach, died suddenly March 31 at the age of 60. Beach started working at Flexible in 1912 and had been its president since 1930. His brother, Milton B. Beach, is vice president of the firm.



H. J. Beach

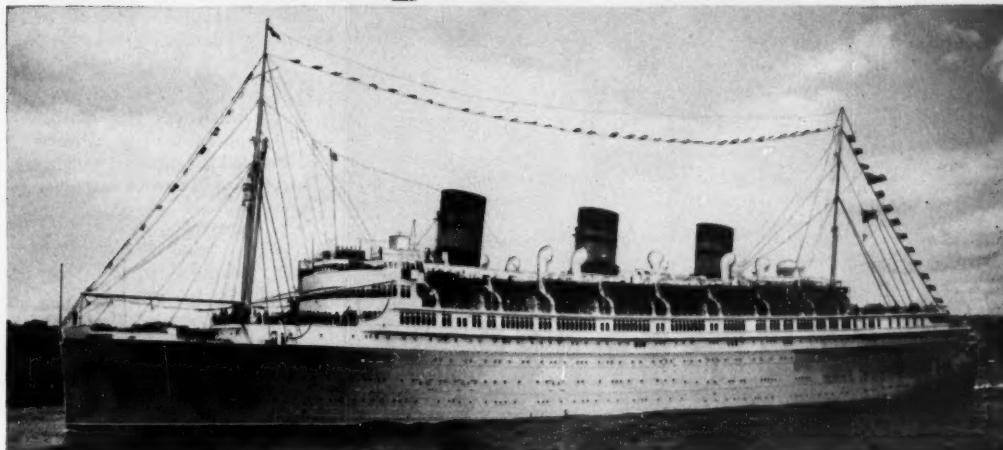
... at Sauerman Bros. Inc.

Dwight D. Guilfoil, 66, vice president and general sales manager, died of a heart attack May 3. He had been in the Sauerman organization since 1913 and was active in the National Sand and Gravel Association and the Chicago Engineers' Club.

... at Beacon Machinery Inc.

E. A. Lucyk has been appointed field sales manager to assist with sales activities of

Win a trip to Bermuda!



The luxury liner Queen of Bermuda

Acme Steel announces a Contest for uses of flat steel strapping

Here's your chance to win the vacation of a lifetime—an all-expense tour for two to sunny Bermuda!

Here's a contest designed to help industry do a better job in shipping and materials handling—to help any individual or any company that ships or handles anything—and it's an easy contest to win!

Just tell us about a successful use of flat steel strapping.

- It may be a use that reduces damage-in-transit, that helps insure S.A. (Safe Arrival) of goods... or it may save time and money on packing, shipping, loading, tallying or storing, as compared with previous methods.
- It may be a use that has paid off in your own company, or it may be one that someone else has found but will let you tell about.
- It may be a use of Acme Steel Strapping, or someone else's flat steel strapping.

This contest is open to anyone in industry, except employees of manufacturers of flat steel strapping, their subsidiaries and their advertising agencies.

Entries must be submitted by July 20, 1953. Entry blanks, rules, and complete details are yours for the asking. Just send in the coupon to Acme Steel Products Division, 2840 Archer Avenue, Chicago 8, Illinois.

FIRST GRAND PRIZE

All-expense trip to Bermuda, for two
(or \$1,000.00 cash)

SECOND GRAND PRIZE \$500.00

THIRD GRAND PRIZE \$250.00

Fourth Prize	\$100.00	Eleventh Prize	\$100.00
Fifth Prize	100.00	Twelfth Prize	100.00
Sixth Prize	100.00	Thirteenth Prize	100.00
Seventh Prize	100.00	Fourteenth Prize	100.00
Eighth Prize	100.00	Fifteenth Prize	100.00
Ninth Prize	100.00	Sixteenth Prize	100.00
Tenth Prize	100.00	Seventeenth Prize	100.00
		Eighteenth Prize	100.00

Acme Steel Company, Dept. F-63, 2840 Archer Avenue, Chicago 8, Illinois. Please send me entry blank and complete details on your steel strapping contest.

Name _____

Company _____

Street Address _____

City _____ Zone _____ State _____

**ACME
STEEL**

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The Original

Unitable® BELT CONVEYOR

The MOST VERSATILE slider-bed belt conveyor on the market today. *Over 2000 satisfied users say so.*

The **UNITABLE**, with its integrated **POWER PAC Drive**, will save you money in initial cost, upkeep and performance. Full specifications upon request.



NEAR YOU is a distributor of **SPECIALTY** Belt Conveyors, Slat Conveyors, Gravity Conveyors, Press Conveyors, "Unitrough" Belt Conveyors, Unipac Handlers (Portable Pilers), Reciprocating Lifts and Complete Package Handling Systems.

CONVEYOR
Specialty
COMPANY, INC.

36 Newport Ave., North Quincy 71, Mass.

MEN IN THE NEWS

Continued

the company's distributors on a nation-wide basis. Before entering the material handling field he had wide experience in transportation.

... at **Ainsworth Mfg. Corp.** The appointment of **Edward O. Hascall** as director of purchasing has been announced by **Warren H. Farr**, company president. Hascall joined Ainsworth's purchasing department in 1930 and prior to his recent promotion **E. O. Hascall** served as assistant director of purchasing under **C. L. Miller**. Miller had been director of purchasing for 24 years before his retirement.



... at **Chain Belt Co.**

F. Dier Tincknell has been elected treasurer of the company, according to **J. C. Merwin**, president. He succeeds **George M. Dyke** who retired after serving 30 years with the company. Tincknell has been identified with the finance and accounts division since joining the firm in 1943 and was assistant treasurer prior to his recent election.



... at **Goodyear Tire & Rubber Co.**

William B. "Billy" Wilson, who began his career in 1903 as Goodyear's first office boy, was awarded a diamond-studded pin recently marking the completion of 50 years service with the company. Making the presentation was **P. W. Litchfield**, current chairman of

← Circle No. 62 on Reader Service Card



BUDA

... specifies

TORCON

HYDRAULIC TORQUE CONVERTER

FOR MAXIMUM LIFT TRUCK PERFORMANCE

Equipped with TORCON hydraulic torque converters, Buda lift trucks are setting new records in work performance, overall economy and ease of operation. These heavy-duty transmissions increase output through maximum utilization of engine horsepower . . . eliminate shock and reduce maintenance on all driving and driven mechanisms . . . and minimize operator fatigue. Engines, gears and other parts last longer, and down-time is virtually eliminated.

TORCON torque converters can be applied easily to all types of machinery. They are designed for standard S.A.E. mounting and are available in a wide range of sizes, with or without transmissions, for practically all Engine and horsepower requirements. Developed especially for the working class of equipment, they provide maximum efficiency over a wide speed range. That's why Buda . . . pioneers in the application of torque converters to lift trucks . . . specifies TORCON!



Write today for Bulletin TC-649. ♦



TORCON
CORPORATION

12H-TC

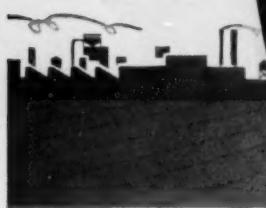
493 E. FIFTH STREET
ASHTABULA, OHIO

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AT LAST!
something
REALLY
NEW in
industrial
wheels...

Rapistan's

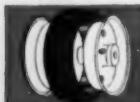
MB



The first STEEL BASED rubber tire demountable wheel



Live rubber tread is bonded for life to a band of steel. Cannot slip, stretch or creep. Neoprene available at no extra cost.



Just four bolts to loosen for tire replacement. One-piece hub assembly with full-sealed roller bearings, extra-large grease reservoir, steel hubcap.

Now it's a fact. A tested fact! A demountable wheel with a thick, live rubber tire *bonded to a band of steel!* A wheel that gives you the performance of a molded-on rubber type . . . the quality of a high-priced pressed-on industrial type . . . and the economy of a demountable type wheel.

Your savings add up to 30%

Twice in a row Rapistan's new MB wheel saves you money. First, it costs about 10% less than the average molded-on wheel. Second, you save money on replacement when the tire is worn. You don't discard the wheel. You don't ship it back for retread. You simply replace its steel-bonded tire quickly and inexpensively. Result—a whopping 30% savings compared to molded-on rubber wheels.

Proved beyond 28 doubts!

Grueling laboratory "punishment" tests, and comparative service tests conducted for six months in 28 leading plants have proved the Rapistan MB is it—superior beyond doubt. The results of these tests are yours for the asking. Write for the facts and judge for yourself.

SEND ME PROOF—Send me test results and comments of test-users concerning the MB Wheel. Also specifications and prices on sizes now available.

Rapistan®
 FASTEST GROWING NAME IN CASTERS
 Representatives in Principal Cities

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MEN IN THE NEWS

Continued

the board, who personally hired Wilson 50 years ago as his office boy. Wilson now is an expeditor and coordinator in Goodyear's metal products division.

. . . at Rack Engineering Co.

M. A. Travis has joined the firm as vice president in charge of sales and consultant services for the central states region. He formerly was plant engineer for Nash Motors body division, and prior to that had been with the American Propeller Corp. in the same capacity.



M. A. Travis

. . . at Hapman-Dutton Co.

The appointment of **William H. Phillips** as vice president in charge of production was announced recently. Phillips formerly was assistant to the president of the Hein Werner Corp. and prior to that was manager of operating services for Hotpoint, Inc. During the last World War he was chief of forecasts and special studies with the War Production Board. At Hapman-Dutton he will be responsible for the production of steam generators and material conveying equipment.



W. H. Phillips

. . . at Package Machinery Co.

At a recent stockholders meeting **Tom Miller** was elected as a new director. All previous directors were re-elected and present company officers were in turn reelected by the directors.

HANDLING HELPS

by A.L.L.

Double Duty Lift Truck!

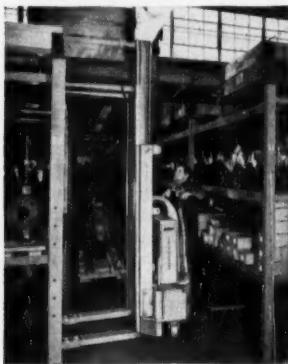
If you use both pallets and skids in your handling system, you'll be interested in this Lewis-Shepard JackLift Hydraulic Truck with a hinged super-frame. The frame is used in its "down" position for skids. It can be swung up and automatically secured in place leaving the forks clear for use with pallets. Rugged arc-welded construction and sealed hydraulic system promise trouble-free service. Capacities to 6000 lbs. Write for the full story on this truck.



position for skids. It can be swung up and automatically secured in place leaving the forks clear for use with pallets. Rugged arc-welded construction and sealed hydraulic system promise trouble-free service. Capacities to 6000 lbs. Write for the full story on this truck.

It Pays to be "Skinny" . . .

This slim new high tiering Walkie gets into the tightest places with ease. And it's fast and smooth operating



too. It's the new Lewis-Shepard Jack-Stacker shown here stacking in a 58" aisle. All controls are in handle head . . . permits operating with handle in any position . . . just squeeze to start, release to brake. Get all the facts. Write Lewis-Shepard Products, Inc., 24-6 Walnut St., Watertown 72, Mass.



"Now Store 50% More Goods in 40% Less Space" . . .



Referring to the Lewis-Shepard SpaceMaster Model "J" Fork Truck,

Mr. R. Ingouf, Gen. Mgr. of the 7-Up Bottling Co. of Memphis says, "We can now store 50% more merchandise in 40% less floor space with the Model 'J'. Moreover, our experience has prompted the purchase of this same truck by other Maher 7-Up plants in the middle west."

Here are some of the features that sold 7-Up on the battery powered Model "J": maneuverability, compactness of design, no clutch, no carbon-monoxide fumes, automatic electrically-controlled braking, and moderate speed . . . particularly desirable when handling glass.

And, the Model "J" sells for $\frac{1}{2}$ the cost of conventional electric fork trucks. The low price is the result of unique Lewis-Shepard designing. Quality components are combined with volume manufacturing to produce a rugged electric fork truck, demanding less space and lower in price than any other.

This truck is but one from the broadest line of materials handling trucks in the nation. Whatever your particular need, compare Lewis-Shepard Trucks before you buy. There's an L-S Representative near you . . . See "Trucks, Industrial" in the Yellow Pages of your telephone book.

Write for the complete 7-Up story on the unique Model "J" . . . and other case histories covering a wide variety of industries. Also request "Electric Truck Comparison Charts" . . . make your unbiased comparison.



The "MASTER" Line



LEWIS-SHEPARD®

24-6 Walnut St., Watertown 72, Mass.

Please send

- Electric Fork Truck Comparison Charts
- Proof Folders showing L-S Trucks at work

Name.....

Company.....

Street.....

City..... State.....

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**whatever you need
you'll cut costs using**

BUSCHMAN CONVEYORS

A recent single order of BUSCHMAN Conveyors filled sixteen freight cars... almost fifteen miles of roller conveyor sections. The small business needing only a ten-foot section to span from loading dock to truck also looks to BUSCHMAN to supply its needs.

Whether your requirements are large or small, BUSCHMAN low-cost, rugged, light weight roller conveyors represent the easiest, most economical way to safely and quickly move packaged or self-contained products through any one or all phases of plant operations.

Write For Bulletin No. 60

THE E. W. BUSCHMAN CO.

4450 Clifton Ave., Cincinnati 32, Ohio

Representatives in principal cities.

Canadian Licensee:
James A. McKechnie, Ltd. Toronto 13, Canada.



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38



THE PHENOMENAL growth of organization in the field of industrial packaging, shipping and material handling is aptly reflected in the outcome of the annual meeting of the national officers, directors and chapter presidents of the Society of Industrial Packaging and Materials Handling Engineers, held in Chicago last month.

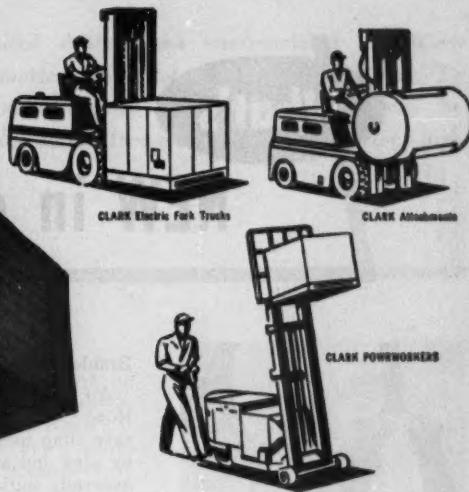
At the meeting, a budget of more than \$50,000 for this year was approved. This eighth annual budget is about nine times larger than that of the Society's first.

The meeting also approved plans for launching a Research Achievement Award Program and another program to sponsor fellowships in carefully-selected institutions of higher learning for promising young packaging and material handling engineers. The Research Achievement Award Program would give annual prizes ranging up to \$1000 to SIPMHE members for papers written on packaging and material handling subjects according to stipulated regulations.

Regarding the 1953 SIPMHE exposition, technical short course and protective packaging and material handling competition, it appears that the triple-feature event will surpass even last year's record-breaking event in number of exhibits, exposition visitors, short course registrants and competition entries. In fact, serious consideration is being given to expanding the originally-planned space because of the great early demand for exhibit space. Incidentally, the exposition this year is being held in Boston the week of October 19.

The short course educational program will be presented by the Mechanical Engineering Department of the Massachusetts Institute of Technology. It will begin on Monday, October 19, and the exposition will open the following day in Mechanics' Hall.

Hedrich-Blessing Photograph,
courtesy of the
EDWARD HINES LUMBER CO.



More people buy
CLARK
Gas Powered Trucks
than any other make!

THERE ARE A LOT OF GOOD TRUCKS on the market, and a lot of good arguments for each. But this fact remains: *more people buy CLARK gas powered trucks than any other make*. Since we produce all power types . . . gas, electric, diesel and L.P. gas . . . we feel we're in a good position to explain why:

CLARK Horsepower Is Capacity-Rated To Your Requirements—Why pay for excess horsepower that you'll never use? CLARK gives you five engines, rated according to truck capacity. You get plenty of power for the job, without a lot of gas-consuming excess. When you buy a CLARK in the size that's right for you, you get the proper horsepower, too.

CLARK Flexibility Meets Any Work Condition—A wide range of speeds and a constant source of power enables your gas powered CLARK to handle any work condition. Flexibility means 'round-the-clock performance of normal operations, with a built-in reserve of power for peak loads and emergencies. And for long hauls, you can't beat the speed and economy of the gas powered CLARK.

The relatively low initial investment cost of CLARK'S gas powered machines is another attractive feature, especially for the one- or two-truck

user. And these machines pay long-term dividends on the investment, because they're built for long service and for ease of servicing.

But then, that's true of all CLARK equipment: industrial fork trucks, POWERWORKER hand trucks, industrial towing tractors—they, too, give you quality-value for your money. That's why industry buys more CLARKS than any other make of truck. When you're in the market for materials-handling equipment, talk to your local CLARK dealer first. Most people do!



CLARK ELECTRIC, GAS, DIESEL, L.P.GAS
AND POWERED HAND TRUCKS - INDUSTRIAL TOWING TRACTORS

INDUSTRIAL TRUCK DIVISION • CLARK EQUIPMENT COMPANY • BATTLE CREEK 12, MICHIGAN

Please send: Condensed Catalog Have Representative Call

Driver Training Movie

Name _____

Firm Name _____

Street _____

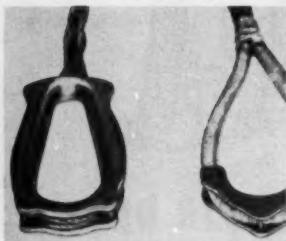
City _____ Zone _____ State _____

AUTHORIZED CLARK INDUSTRIAL TRUCK DEALER AND SERVICE STATION IN STATE/CITY

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What's

NEW in equipment



Braided Slings

An 8-part braided sling manufactured by A. Leschen & Sons Rope Company features a reusable thimble fitting that is said to save sling users 20 percent or more. These thimbles are attached by pins and are readily removable for reuse. Since sling fittings generally outlast the sling itself, substantial savings are gained by their reuse. For example, on a 10-foot sling of $\frac{1}{2}$ -inch wire rope, it is claimed that reuse of two full thimbles produces a savings of 23.6 percent.

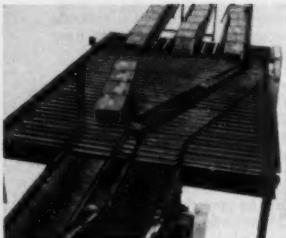
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Redesigned Fork Truck

Shown here is the redesigned Model YC-40 fork truck manufactured by Hyster Company. Outstanding features are said to be compactness, durability and maneuverability. It has a capacity of 4000 pounds at 24-inch load centers. Its width of only 38 inches and short overall length of $7\frac{1}{2}$ inches permit it to operate with speed and efficiency inside boxcars and in crowded quarters. Its collapsed height of $8\frac{1}{2}$ inches permits it to pass through ordinary doors and under low ceilings. It turns in a radius of 75 inches.

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Case Dividers

Manufactured by Alvey Conveyor Manufacturing Company, this mechanism provides a simple positive means of controlling the flow of packages from a single or multiple supply source and directing the flow to receiving lines in a predetermined pattern. It is so arranged that the packages may be counted onto the case divider from the supply lines. The drop section at the entry to the divider serves as a control and will allow cases to be counted as they pass onto the machine, stopping the flow as required.

Circle No. 192 on Reader Service Card for more information



Fork Truck Sweeper

Announcement of additional features on the Yard Bird fork truck sweeper has been made by the manufacturer, Little Giant Products, Inc. Among these features is the redesigned pick-up pan, which has three times the capacity of the one it replaces and has a dump bottom. Since the unit can be raised or lowered by the fork truck, it can be quickly and easily emptied. Another development is the installation of casters and a flexible mounting, which permits the sweeper to "hug" the surface it sweeps, regardless of floor irregularities.

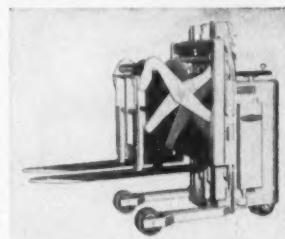
Circle No. 193 on Reader Service Card for more information

Capsuled descriptions summarizing the latest information obtained from manufacturers. To get more details quickly, ask for them by number on the free-mailing Reader Service Card.

"Boarding-House Reach" Truck

An electric tiering truck with forks that reach out to pick up or deposit loads has been introduced by The Raymond Corporation. Described as the truck with the "boarding-house reach", it is said to make narrow storage aisles practical in every warehouse. It will right-angle tier from any 6-foot aisle, because of its unique fork action, short length and offset drive wheel with 200-degree turning arc. Designed with a 51-inch free lift, it has a capacity of 2000 pounds and its forks extend 24 inches.

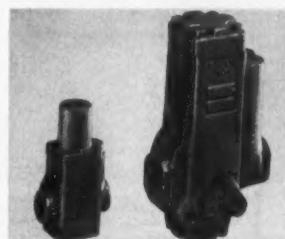
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Flow Control Valve

A hydraulic flow control valve for fork and straddle trucks is manufactured by Benton Harbor Engineering Works. Sizes are available for 2000 to 30,000 pound fork trucks, and 45,000 pound straddle trucks. The automatic, self-regulating valve controls the lowering speed of a load in inverse proportion to load weight. Of prime importance, especially when the load is near the truck's rated capacity, is the positive elimination of surge at the start of lowering. Pressure in the hoist cylinder actuates the valve.

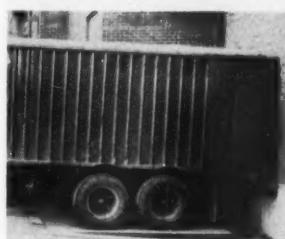
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Dock Truck Leveler

The Adjust-A-Truck shown here is a device designed to raise or lower trucks to dock height. Manufactured by Rowe Methods, Inc., it is said to be ideal for firms which do not have adequate room on their docks or in front of their docks to install adjustable dock ramps. The unit is set into the pavement in front of the dock, and by means of a heavy-duty electric hydraulic system, to adjust each vehicle to dock height. Capacity of the unit is 40,000 pounds, and it is designed for a 110-volt control circuit.

Circle No. 196 on Reader Service Card for more information



Additions to Fork Truck Line

Shown here is one of the four HiDuty fork truck models, designated as the "FLW" series, which have been added to Transitier Truck Company's line. These models have a distinctive design change appearance and were developed to give truck users a wider choice of types of equipment. The complete line now offers a choice of either the Waukesha industrial engine or the Crosley industrial engine. Standard on the trucks is the HiDuty free lift feature, dual lever controls and the HiDuty Hydroflex clutch.

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WHAT'S NEW IN EQUIPMENT

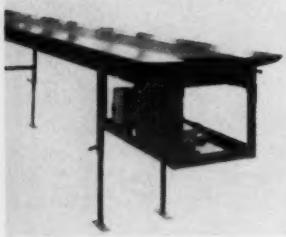
Continued



Sit-Down Fork Truck

Mercury Manufacturing Company has announced its Model 430 Yak fork truck, a 4,000-pound capacity sit-down truck. Among its features are: higher maximum fork elevation, increased free lift, faster travel speed, shorter outside turning radius, ability to right-angle stack in narrower aisles, lighter chassis at no sacrifice of stability and sit-down operation with convenience of control. Construction features include: simplified hoisting mechanism, improved travel controls and frame, and new drive assembly and steering axle.

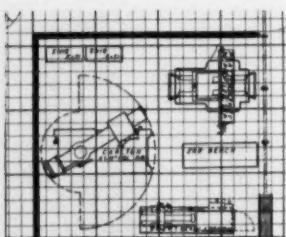
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Rigid Apron

This rigid apron is available for all Metzgar belt and live roller conveyors for use as benches in assembly or inspection operations. A variable speed drive can be furnished to suit in ranges of 4:1 and speeds from 5 feet per minute and up. Also, belts to meet special handling requirements are available on all power belt models. The manufacturer is Metzgar Company.

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Layout Templets

Called Simpli-Prints, these layout templets are .005-inch thick plastic acetate, backed with a pressure sensitive tape. Machine templets are colored salmon, and office machines are colored green. Since they are transparent, they can be written on with a pencil or ink to show special tooling, machine number and horsepower of motors. All of today's standard machines are available. Special machines (those dating back before 1940) and custom drawn models are available at a slight additional charge. Manufacturer is Model Layouts.

Circle No. 200 on Reader Service Card for more information



Battery With Catalyst Caps

A storage battery that is fitted with catalyst filler caps that eliminate loss of battery fluid has been introduced by Hester Battery Manufacturing Company. It is claimed that such components as Fiberglas separators and multi-plate cells, together with the catalyst caps, combine to provide a battery with power reserve, dependability and long life. It is said the battery caps make the water in the battery last more than seven times longer than normal by converting escaping gases back into water.

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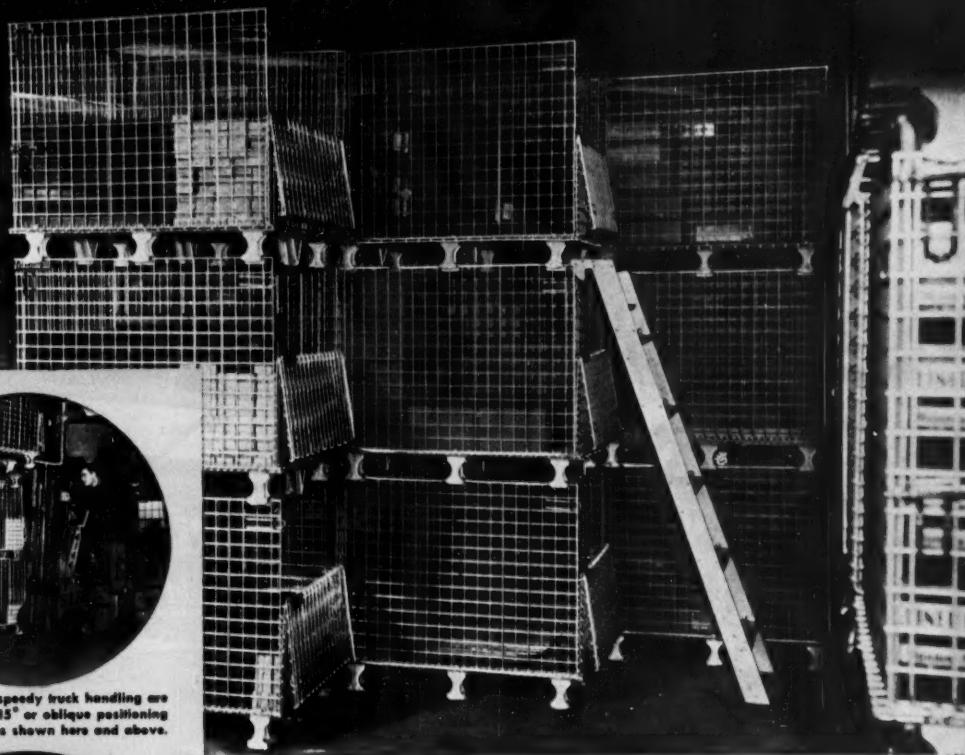
Fluid Coupling

Utilizing silicone fluids, and operating by a different principle, this coupling is said to be compact, trouble-proof and leakproof. No larger in diameter than the standard motor and adding but $\frac{1}{4}$ inch in length to the motor, the unit is furnished complete with flexible coupling for attaching to driven shaft, or with V-belt pulley. It is available in sizes from $\frac{1}{4}$ hp to 4 hp at 1800 rpm. Claimed to provide smooth acceleration and to prevent overloads, the unit is manufactured by L & S Industries.

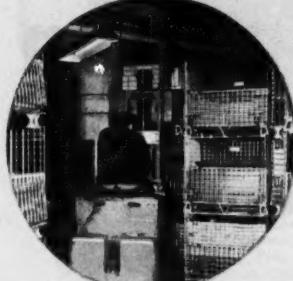
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(Continued on page 145)

LIVE STORAGE *Revolutionized!*



Easy access and speedy truck handling are obtained with a 45° or oblique positioning of 3-unit stacks as shown here and above.



Even in crowded quarters, lift trucks can easily place or remove Palletainers in the 45° or oblique position.



Palletainers fold flat to 25% of their open size for storage and shipment. Are easily transported in plant and quickly set up.

always **VISIBLE** ... always **ACCESSIBLE!**

Though hardly a year old, the new warehouse version of the versatile USP Palletainer is already revolutionizing the handling and storage of service parts for the Automotive Industry. Its special features make it readily adaptable to many other live storage operations. A special hinged-end access door allows fast, easy removal or replacement of contents. This feature plus the exclusive USP cast steel stacking leg permits stacking in positions that afford greater space saving, require less aisle space yet permit free access to stockmen and lift trucks. Add to these features the advantages of visual inventory, increased storage capacity and fold flat shipping and storage and you can see why USP Warehouse Palletainers save time, labor and money for live storage. USP engineers will gladly study your live storage problems and submit recommendations.

PALLETTAINERS

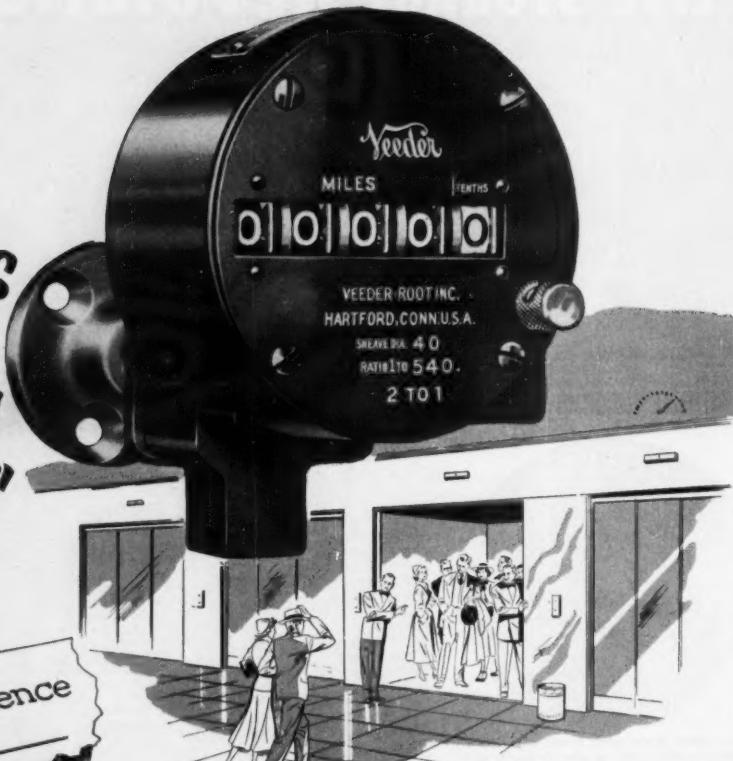
Manufactured only by
UNION STEEL PRODUCTS COMPANY
ALBION, MICHIGAN

1902 *Our Golden Anniversary* 1952

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*It counts
your
"UPS and
DOWNS"*



*Added Evidence
that*

**Everyone Can Count on
VEEDER-ROOT**

Elevator Mileage Recorders give accurate figures on vertical miles . . . so that it can be plainly seen...in advance...when it's time to replace cables, overhaul cars, motors, and what have you . . . *including your life.*

Yes, the V-R wheelmark monogram protects millions of people daily, from the depths of the sea to the stratosphere. Of course, not all V-R Products and services are available nowadays

... but if your work counts importantly in defense, then you can count on Veeder-Root to help you, as soon as rush commitments permit.

VEEDER-ROOT INCORPORATED
"The Name That Counts"
HARTFORD 2, CONN.

Chicago 6, Ill. • New York 19 • Greenville, S. C.
Montreal 2, Canada • Dundee, Scotland

Offices and agents in principal cities

Counts Everything on Earth



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JUNE, 1953 • FLOW

Why pay 2 men — to do a 1-man job?

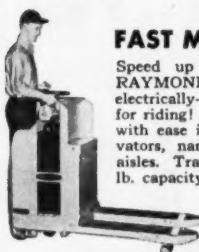
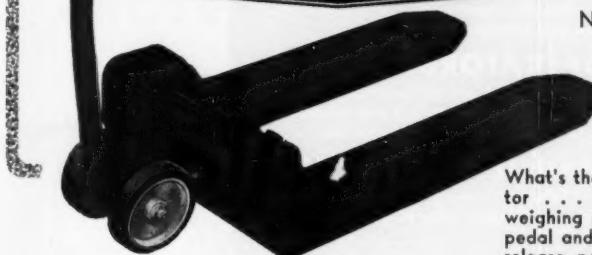


Lightweight

RAYMOND

PALLET LIFT TRUCK

NOW . . . one man can do the work
of two or more men with this
modern . . . lightweight . . .
RAYMOND Pallet Truck!



FAST MOVER!

Speed up lateral handling with this RAYMOND Low-Lift Truck . . . it's electrically-powered, designed especially for riding! Fast, maneuverable, operates with ease in truck trailers, boxcars, elevators, narrow storage and production aisles. Travels up to 6 mph, has 4,000 lb. capacity.

What's the secret? Hydraulic power—not the operator . . . does the heavy lifting, elevating loads weighing up to 2,000 lbs. A few pumps on the foot pedal and the load is ready for hauling. A separate release pedal lowers the load gently and smoothly . . . permits it to be stopped at any point.

Use this RAYMOND Pallet Truck for short hauls and peak period handling or to release power trucks for long hauls and tiering. It's smooth-rolling, has full 270° steering arc for maneuvering in cramped quarters. Available in 2,000 lb. capacity model illustrated, or in Heavy Duty 4,000 and 6,000 lb. capacity models.

SEND FOR BULLETIN

Learn how RAYMOND Pallet Trucks can help you cut costs, use manpower more efficiently. Contact your nearby RAYMOND representative and arrange for a demonstration!

The RAYMOND CORPORATION

3315 Madison St., Greene, N.Y.

Please send me Bulletin 207, describing RAYMOND Hydraulic Pallet Lift Trucks. Also Bulletin 750, showing your Low-Lift Electric Truck.

NAME _____ TITLE _____

COMPANY _____

STREET _____

CITY _____ STATE _____

RAYMOND
ELECTRIC INDUSTRIAL TRUCKS
HYDRAULIC ELEVATING EQUIPMENT

Circle No. 86 on Reader Service Card for more information

MOTO-TRUC

Designed for...

Pallet type
"Walkie" truck
4000 to 6000 lb.
capacity.

Hi lift "Walkie"
type 3000 to 4000
lb. capacity.

Platform
"Walkie" type
4000 to 10,000 lb.
capacity.

✓ PURCHASING DEPT.

Costs less . . . fits into budgets . . .
economical.

✓ ENGINEERS . . .

Rugged, all welded construction . . .
constant traction . . . stabilized 4 point
load support on Hi-Lift . . .

PLANT MANAGERS . . .

Small . . . compact . . . minimum opera-
tion and storage area . . .

✓ OPERATORS . . .

Simplified operation through "Roller
Grip" controls . . . anyone can operate the
truck with very limited instruction . . .

✓ MAINTENANCE MEN . . .

Especially designed for quick servic-
ing . . . all parts easy to get to . . .

Model G. A.
Tractor.

Regardless of individual titles, it will pay
you to get ALL the facts on MOTO-TRUC . . .
and there's a MOTO-TRUC for every purpose.

SEND FOR
BULLETIN NO. 51



The MOTO-TRUC Co.
Representatives in Principal Cities

1955 E. 59th St. • Cleveland 3, Ohio
Pallet . . . Platform . . . Hi-Lift Trucks
LARGEST EXCLUSIVE MANUFACTURER
OF "WALKIES"



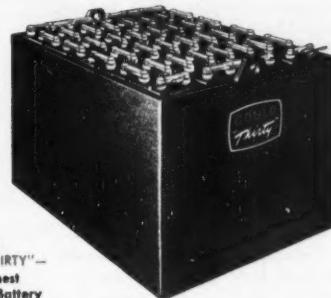
PROTECTION

Against Downtime . . .

THANKS TO BATTERY POWER!

Battery power is the most dependable industrial truck power available today! With a minimum of moving parts, battery trucks work longer, last longer, chalk up in-service records no other type of truck can approach. Such dependability . . . such freedom from downtime . . . means maximum materials handling economy. Protect *yourself* against expensive downtime with Gould-battery-powered industrial trucks.

Specify
THE GOULD "THIRTY"—
America's Finest
Industrial Truck Battery



GOULD INDUSTRIAL BATTERIES

GOULD-NATIONAL BATTERIES, INC., TRENTON 7, N. J.

Always Use Gould-National Automobile and Truck Batteries

Circle No. 64 on Reader Service Card for more information

©1953 Gould-National Batteries, Inc.

Literature

featured in this month's advertisements

Essence Of Time

The sealing of shipping containers is a necessary operation adding to the cost of your product. The speed with which it can be done reduces the cost. Marsh Stencil Machine Co. has additional information describing its Dial-Taper, which is said to effect a full 20 percent saving in time and tape.

Circle 67 on Reader Service Card

Overhead Handling

A profusely illustrated folder available from Whiting Corp. describes how its Trambeam speeds work in six departments of the Reliance Electric Co. This case history possibly may contain the answer to many another handling problem where overhead traveling cranes are most suitable.

Circle 35 on Reader Service Card

Powered Sweeping

The G. H. Tennant Co. has available complete details of its Model 75 power sweeper which features heavy-duty design built to last many years, and quick dumping device. One man is said to be able to dump a fully loaded dirt hopper within 24 seconds. Car type steering for easy operation also is featured in the literature.

Circle 33 on Reader Service Card

Easy Wheeling

Catalog No. 63A may be requested from Sterling Wheelbarrow Co. showing its complete line of easy wheeling vehicles. The literature shows models with all-tubular steel frames or choice hardwood frames, steel or pneumatic wheels, each designed to a particular job.

Circle 32 on Reader Service Card

Automatic Door Opener

Stanley Works has available full information of its Magic Door Controls showing their relatively low cost of installation in relation to increased savings in manpower, heat loss, speed of production and genuine convenience. Numerous types of doors are described which can be controlled automatically to facilitate any type of traffic flow.

Circle 31 on Reader Service Card

Box Cars Are Stubborn

Ever try to open a box car door alone? In many instances it couldn't be done. The Nolan Co. has free literature and catalogs available describing its one-man car door opener device which is said to do the job in 20 seconds. It's safer, too, they claim, because it eliminates the possibility of strained backs or mangled limbs.

Circle 26 on Reader Service Card

The Age of Rubber

Mobile industrial equipment rolls best on rubber tires. Depending on the type truck and its use is the tire that will best suit the job. Monarch Rubber Co. has complete literature available on pneumatic or solid rubber tires to fit any vehicle.

Circle 25 on Reader Service Card

Lifetime Platforms

Steel bound platforms with armored ends for rough handling by powered trucks are described in literature obtainable from the Lanham Co. Special purpose skids also can be obtained with end racks, stake pockets, shelves and crane hooks.

Circle 19 on Reader Service Card

One Man Operation

Complete information may be obtained from Manzel on its hydraulic Floor Crane, which is said to economically solve many handling problems. The heaviest weights may be lifted, lowered or moved from place to place by a single man using the Manzel crane. In the warehouse it is readily adaptable to the narrowest aisles.

Circle 23 on Reader Service Card

Mechanical Hands

Not every heavy material can be picked up by a hook. The contour of its size, shape or substance may require some one of numerous grips and clamps described in literature available from Merrill Brothers. Whether it be lifting of steel drums, flat sheets of steel or some other equally bulky item Merrill Brothers' catalog might contain the solution you need.

Circle 24 on Reader Service Card

Smooth Performance

A copy of their latest catalog may be obtained from Madesco Tackle Block Co. showing standard and special tackle equipment. The literature explains Madesco features of anti-friction bearings and bronze bushings and properly machined sheaves which provide added cable protection.

Circle 22 on Reader Service Card

Prevent Shipping Damage

Kimberly-Clark Corp. will provide complete information on its custom protection for inside packaging. Their product is Kimpak, a soft, light cushioning material which can be patterned to your individual product and its container.

Circle 18 on Reader Service Card

All
power trucks
lift, move
and stack

BUT ONLY YALE GAS TRUCKS HAVE FLUID DRIVE

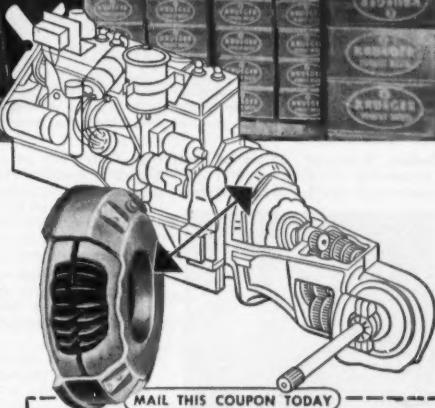


Smooth, trouble-free Fluid Drive gives you 3 to 8 times
longer clutch life...saves costly, work-stopping
clutch repair and too-frequent replacement.

Less down time is just one of the big advantages of Yale-exclusive Fluid Drive. You get continuous, stall-free operation...smoother stops and starts to protect your load as well as your operator.

Other Yale Gas Truck features...many of them exclusive...include rugged 65 HP Industrial Engine—safer, surer Automotive-type Brakes—Shockless Steering—Hypoid Gears.

Yes, **YALE** Trucks and attachments lead in money-saving efficiency...cut costs as much as 75% in industries everywhere. And, every Truck **YALE** makes...Gas, Electric, Diesel, LP-Gas or Gas-Electric...is subject to rigid Quality-Control checks at every stage of manufacture.



MAIL THIS COUPON TODAY

The YALE & TOWNE Manufacturing Co., Dept. 46
Roosevelt Blvd. and Haldeman Ave., Phila. 15, Pa.

Please send my free copy of Picture Story of
Yale Materials Handling Equipment.

Company _____

Name _____ Title _____

Street _____ City _____ State _____

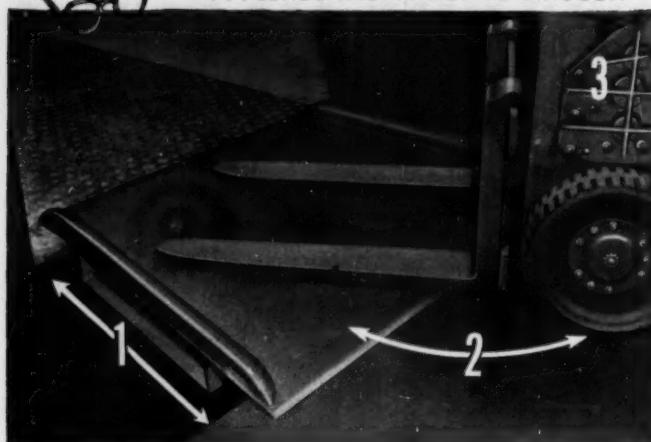
In Canada write: The Yale & Towne Mfg. Co.,
St. Catharines, Ontario, Canada

YALE
MATERIALS HANDLING EQUIPMENT

*Registered trade mark

Gas, Electric, Diesel Lift Trucks • Worksavers • Hand Trucks • Hand and Electric Hoists • Pul-Lifts
Circle No. 74 on Reader Service Card for more information

LOOKING INTO THE FACTS
... LEADS INEVITABLY TO MAGCOA



This light-weight **HEAVY-DUTY**
MAGCOA DOCKBOARD
is a Better Investment . . . and here's why

1. **Made for this Specific Span**—You know the problem of bridging car-dock and truck-dock spans. No problem in this case: the Magcoa representative specified the exact size Dockboard for this span.
2. **Made for this Specific Turning Radius**—This is a narrow dock. The lift truck's turning radius could have presented a problem—but didn't. This Magcoa Dockboard flares out just enough for this narrow dock . . . permits part of the turn to be made while the truck is on the board.
3. **Made for this Specific Truck and its Load**—As you know, the weight of different handling equipment and loads varies considerably. No problem here: this Dockboard was made for the specific weight requirements of this company's equipment with top capacity loads.

Quick Delivery—Long Life—Low Net Cost—Ordinarily you'd assume that equipment designed for specific requirements would get a premium price or take longer to manufacture. No problem on that score: Every Magcoa Dockboard is manufactured on a mass-production basis; and, if there is sometimes a price differential, it can be checked off as negligible compared to the greater long time value you get in a Dockboard that fits your specific needs.

Safety, Economy, Efficiency Features—Only Magcoa gives you all these features: (1) rounded curb-ends for safer turns, (2) quarter-round safety curbs that protect tires while preventing run-offs, (3) comfortable one-piece hand holds for safe lifting and positioning,

(4) angled crown that keeps edges flush on floors, (5) rounded edge beveling that saves tires, equipment, loads, and (6) rugged safety spans for extra strength and elimination of slipping.

Magcoa Service—At Your Service—If your Dockboard needs repair because of abuse or misuse, Magcoa Service is at your service—to put your equipment in good working order, in short order!

Looking into the Facts is the title of our new facts file. It's loaded with information you ought to have to make a sound Dockboard investment . . . and it's yours for the asking. At the same time, look into the new Magcoa Portable Yard Ramp. It's a rugged, high-speed loading dock . . . where and when you want it.



Another "tough" bridgeplate problem solved quickly and permanently by a Magcoa Dockboard.

MAGNESIUM COMPANY OF AMERICA
MATERIALS HANDLING DIV., EAST CHICAGO 1, IND. — *Representatives in Principal Cities*

DIVISION OFFICES:

NEW YORK 26,
30 Rockefeller Plaza
PHILADELPHIA 16,
300 South Broad Street
WASHINGTON 5, D. C.
Waikiki
HOUSTON 17,
7607 Main Street
LOS ANGELES 39,
8827 W. 25th St.
SAN FRANCISCO 4,
Rose Ring

Please send: <input type="checkbox"/> Dockboard Facts File <input type="checkbox"/> Portable Yard Ramp Literature	
Name & Title _____	
Company _____	
Address _____	
City-Zone-State _____	

Circle No. 55 on Reader Service Card for more information

AD LITERATURE

Continued

Sweeper Attachment

Literature describing a floor sweeper attachment which can be mounted on any fork lift truck may be obtained from Little Giant Products Inc. It is said that only five minutes are required to equip any truck with the sweeper. Up to 100,000 square feet per hour can be swept, and the floating dust pan may be emptied quickly into any height receptacle.

Circle 21 on Reader Service Card

Light Capacity, Low Cost

Not every application requires heavy duty handling equipment. Lempco Products Inc. has its bulletin available describing a 1/2 ton traveling crane which operates easily in close quarters. They maintain it is low enough to go into elevators, operate in narrow aisles and through small doors.

Circle 20 on Reader Service Card

Safeguarding Engines

The John W. Hobbs Corp. will provide complete data in its catalog No. 569 covering Hobbs Engine Hour Meters. The instrument accurately records the hours and minutes of engine operation thereby eliminating guesswork in maintenance and helps prevent breakdowns.

Circle 16 on Reader Service Card

Manual And Film

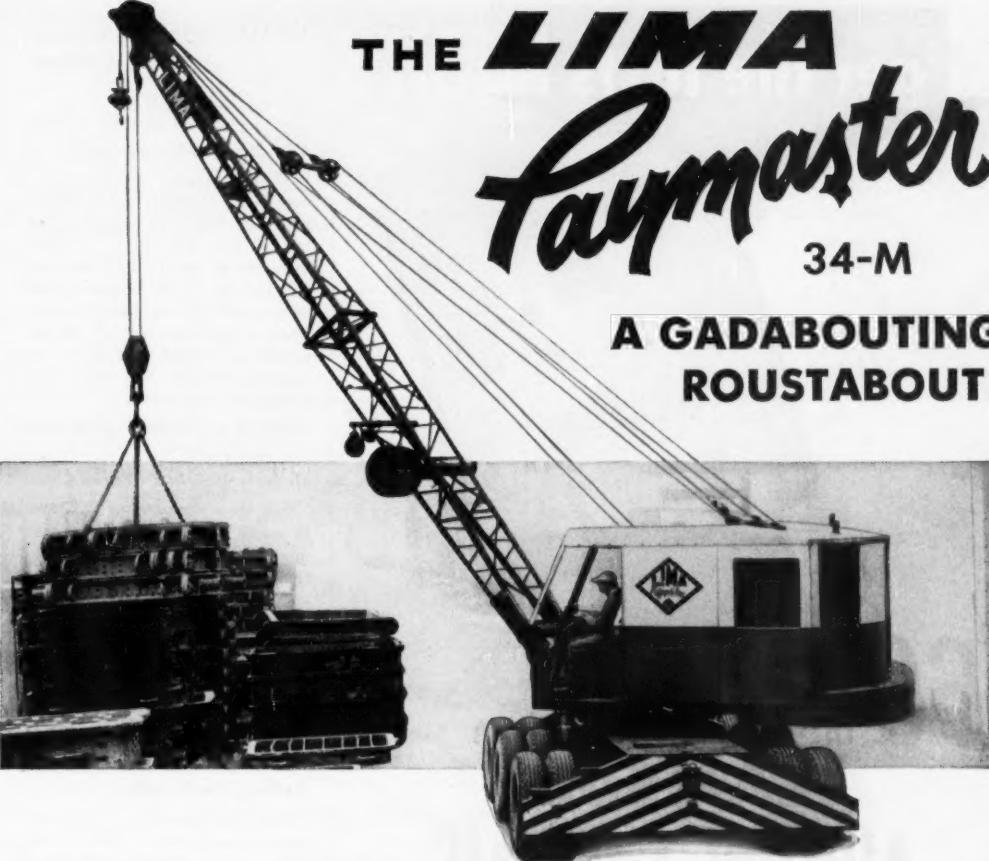
A copy of the new manual entitled, "Materials Handling", may be obtained from the General Electric Co. as part of its "More Power To America" program. The bulletin is numbered GEA-4962. An accompanying film also may be viewed for the asking.

Circle 14 on Reader Service Card

Handling Heavy Coils

Coiled wire or sheet metal can be very heavy—too heavy for one man and a hoist to handle. Dixon Automatic Tool Inc. has available literature describing its coil grab which enables a single hoist operator to handle coils up to 10,000 pounds and 48 inches in width.

Circle 10 on Reader Service Card



THE **LIMA**
Paymaster
34-M

**A GADABOUTING
ROUSTABOUT!**

We mean this Lima Type 34-M crane mounted on a 12 wheel undercarriage . . . *gadabouting* because it can rove anywhere that anything on wheels can go . . . *roustabout* because it's the ruggedest handyman you can have around your plant.

This Lima Paymaster on wheels can save you time and money on a great variety of material handling jobs. As a crane it can lift up to 20 tons, loading and unloading shipments, handling scrap, equipment or materials. (See above photo

where it is stacking mould flasks at a foundry.)

It is also easily converted to a shovel, dragline or pullshovel, making it ideal for handling sand, gravel or raw materials, digging ditches, sewers, general construction.

We would like very much to have a chance to send you more information about how this rubber-mounted Lima Paymaster can handle material for you faster and more economically. Please write to—

LIMA DISTRIBUTORS IN PRINCIPAL CITIES OF THE WORLD

LIMA
SHOVELS • CRANES
DRAGLINES • PULLSHOVELS



BALDWIN-LIMA-HAMILTON CORPORATION
Construction Equipment Division
LIMA, OHIO, U.S.A.

Construction Equipment Division

get the facts

60 informative pages on
LAMSON
AIRTUBE SYSTEMS

...gives you profitable ideas for using pneumatic tube systems, both conventional and automatic—including dimensional drawings, architects' data, typical installations, case histories and lots more—all in two handy catalogs.

We have copies for you . . . just clip this coupon to your signed letterhead and mail.

LAMSON

LAMSON CORPORATION
1406 Lamson Street, Syracuse 1, N. Y.

Gentlemen:
Without any obligation on my part, please send me my copies of the Lamson Airtube Catalog and the Lamson Automatic Switch System Bulletin.

Name. _____ Title. _____

Company. _____

Address. _____

City. _____ Zone. _____ State. _____ (2) 8803

Circle No. 66 on Reader Service Card for more information

52



AD LITERATURE

Continued

For Minor Moving Jobs

The old standby for intra-plant movement of light, not-too-bulky materials still is the simple hand truck. The Fairbanks Co. has available its bulletin SFT showing full details of its complete line of two and four-wheel hand trucks. Their steel framed wood chassis combines strength and shock absorption. Wheels vary according to the need of the job.

Circle 13 on Reader Service Card

Orderly Stacked Wares

Slip-shod warehousing is bound to waste space and increase handling costs. The Equipment Mfg., Inc. catalog describes how the use of its strong square tubular racks conserve space, make stored materials more easily accessible and in doing so, bring about numerous economies in your entire warehousing operation.

Circle 12 on Reader Service Card

Reduce Back Aches

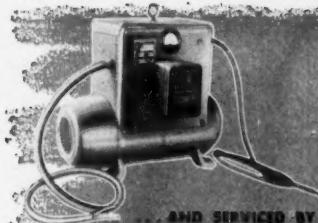
Dragging heavily loaded tote pans across the floor is as obsolete as the ox cart. Easy-Tote Products Co. will provide full information about its handy departmental truck which loads the tote pans with one simple stroke of the handle. Then it's simply a matter of taking the Easy-Tote truck in tow to its destination. Three wheels, one which swivels, makes locomotion and steering as easy as can be.

Circle 11 on Reader Service Card

Keep Bins Flowing

Flowable materials do not always flow. In a gravity bin there can be the possibility of caking, moisture hardening or some other obstruction to cause stoppages. The Gerotor May Corp will send a copy of its "Flow Stoppage Report Form" and data telling how its Pneubin pulsating neoprene panels help keep stubborn materials on the move.

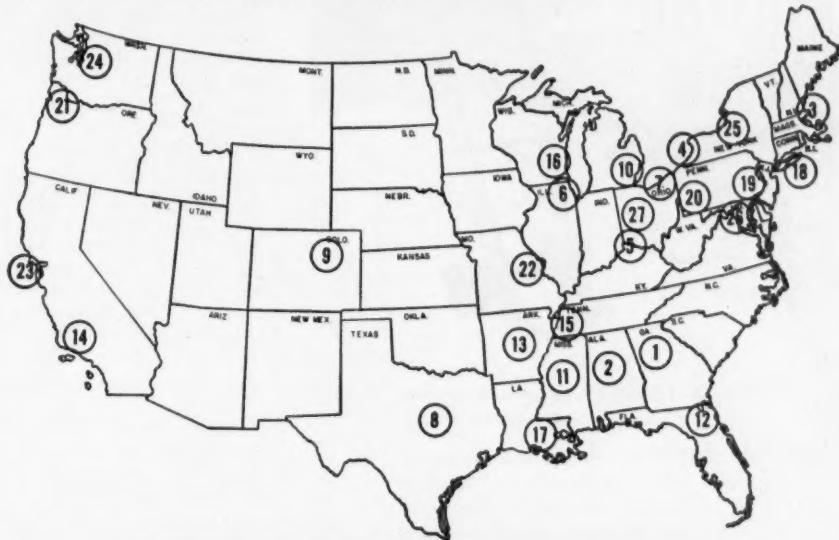
Circle 44 on Reader Service Card



HOBART AUTOMATIC BATTERY CHARGERS

SOLD BY THE LEADING ELECTRIC TRUCK MANUFACTURERS...

... AND SERVICED BY THESE HOBART CHARGER REPRESENTATIVES ACROSS THE COUNTRY.



HOBART GIVES BETTER SERVICE BY EXPERIENCED MEN

1. ATLANTA, GEORGIA
Mark C. Pope
Northside Station Box 153
Phone—Cherokee 3790

2. BIRMINGHAM, ALABAMA
Eugene T. Shorley
Homewood Station Box 5987
Phone—2-0064

3. BOSTON, MASSACHUSETTS
George A. Delboe
10 High Street, Room 503
Phone—Hancock 6-2132

4. BUFFALO, NEW YORK
LeRoy W. Staff
130 West Chippewa Street
Phone—Madison 5256

5. CINCINNATI, OHIO
Young-Well Associates, Inc.
7446 Vine Street
Phone—Poplars 4731

6. CHICAGO, ILLINOIS
Agor Equipment, Inc.
3454 West Lake Street
Phone—Sacramento 2-6750

7. CLEVELAND, OHIO
Young-Well Associates, Inc.
14812-20 Detroit Avenue
Phone—Boulevard 2-1130

8. DALLAS, TEXAS
James W. Conley
10122 Lake Garden
Phone—Victor 3553

9. DENVER, COLORADO
Howard Toncray, II
1732 Blake Street
Phone—Cherry 1102

10. DETROIT, MICHIGAN
John P. Harrington
3049 East Grand Boulevard
Phone—Trinity 2-0388

11. JACKSON, MISSISSIPPI
Gregory-Salsbury & Company
514 Court Street
Phone—S-8305

12. JACKSONVILLE, FLORIDA
Charles E. Singletor
P. O. Box 6254
Phone—8-6390

13. LITTLE ROCK, ARKANSAS
Gregory-Salsbury & Company
400 Schali Street, Room 114
Phone—4-8314

14. LOS ANGELES, CALIFORNIA
Fred Pellelier Company
1729 Santa Street
Phone—Prospect 5698

15. MEMPHIS, TENNESSEE
Gregory-Salsbury & Company
2523 Broad Avenue
Phone—33-8981

16. MILWAUKEE, WISCONSIN
The Brottner Company
5625 West Wells Street
Phone—Greenfield 6-0153

17. NEW ORLEANS, LOUISIANA
Gregory-Salsbury & Company
820 Julia Street
Phone—Tulane 5207

18. NEW YORK, NEW YORK
R. M. Peas Associates, Inc.
198 Broadway
Jersey City, New Jersey
Phone—Journal Square 2-4842

19. PHILADELPHIA, PENNSYLVANIA
Charles F. Gross
301 Leedem Street
Jenkintown, Pennsylvania
Phone—Turner 0250

20. PITTSBURGH, PENNSYLVANIA
A. C. Moore
200 Penn Building
727 Penn Avenue
Phone—Churchill 1-9051

21. PORTLAND, OREGON
N. J. McCormick
427 N. E. Cook Street
Phone—Tuxedo 1449

22. SAINT LOUIS, MISSOURI
E. H. Boyer
559 North Skinker Boulevard
Phone—Vulcan 3-6171

23. SAN FRANCISCO, CALIFORNIA
McCormick-Morgan Company
725 Second Street
Phone—Sutter 1-6591

24. SEATTLE, WASHINGTON
Industrial Products Company
2911 First Avenue South
Phone—Main 7488

25. SYRACUSE, NEW YORK
Harry R. Bungay, Jr.
440 East Genesee Street
Phone—76-2797

26. WASHINGTON, D. C.
Felix W. Altrup
344 Washington Building
13th & New York Avenue N.W.
Phone—NA1010 1852

27. MOTOR CORPORATION CO., INC.—PORATION—TROY, OHIO
Hobart Brothers Affiliate
Main Offices & Factory
20 Miles North of Dayton on
U.S. Route 25
Phone—21223

For further information contact the office nearest you, or write to:

MOTOR GENERATOR CORPORATION • BOX FLO-63 • TROY, OHIO

Hobart Brothers Affiliate

22 of 27

Circle No. 69 on Reader Service Card for more information

KEEP IT MOVING-

WITH

Fairbanks HAND TRUCKS

**The best trucks made
for your materials
handling job**



THEY'RE TOUGH: steel framed wood chassis for strength and shock absorption.

THEY'RE SMOOTH: available with any type of wheel—Semi-Steel to Vulcanized Rubber Tired, with roller bearings and pressure lubrication—for easy rolling everywhere.

THEY'RE BALANCED: a COMPLETE line providing the right style for your particular material handling requirements.

Series 21 LOCK-WELD Swivel Casters eliminate the greatest cause of caster failure: the king pin.

Fairbanks Steel
Framed Platform Trucks take
the LOAD off your mind.



Write for your copy of Fairbanks SFT Bulletin for further details on **Steel Framed Hand Trucks**

THE **Fairbanks** COMPANY
393 LAFAYETTE STREET • NEW YORK 3, N.Y.
Branches: New York 3 • Pittsburgh 22 • Boston 10 • Rome, Ga.

VALVES • DART & PIC UNIONS • TRUCKS • CASTERS
Circle No. 13 on Reader Service Card for more information

AD LITERATURE

Continued

Yard Handling "Must"

Baldwin-Lima-Hamilton's type 34-M crane mounted on a 12-wheel undercarriage is described in detail in literature available from the manufacturer. With a 20-ton capacity it is said to be unusually versatile for its size in that it can move anywhere that its wheels will take it.

Circle 36 on Reader Service Card

Cuts Loading Costs

Details on its complete line of loading ramps is available from the William Christensen Co., Inc., Built into your loading dock, its up and down movement compensates for irregular level between trucks and dock, and bridges the gap between them for faster, easier movement of goods.

Circle 8 on Reader Service Card

Rugged Shop Containers

Cesco Container Co. invites you to submit your specifications for special tote boxes required in your plant. Wherever their standard boxes will not fill the job, special sizes will be made to order. Cesco's tote boxes are said to be constructed of hardwood lumber with special steel reinforcing features. Complete descriptive literature is available.

Circle 7 on Reader Service Card

Designed For Small Parts

Storage of small parts is said to be well taken care of through the application of Ironbound Box & Lumber Co. containers. Catalog GP-7 explains the details of construction which employ unique tiering and stacking features.

Circle 17 on Reader Service Card

Handling Adds Costs

Alvey Conveyor Mfg. Co. invites requests for a visit from one of its materials handling experts. They are available for advice without obligation on your part. They will show you how putting your product on conveyors reduces handling and costs as well.

Circle 39 on Reader Service Card

HERE'S WHERE YOU START...



TO GET LOWER MATERIALS HANDLING COST...

These are facts that should interest every manufacturer:

- 1.—More than 30 percent of the cost of the average manufactured product comes from handling expenses.
- 2.—Handling adds nothing to the value of the product.
- 3.—Reducing handling costs is the one way to lower product costs without sacrificing quality.
- 4.—Four out of five plants could further reduce handling costs.

5.—The Powell representative is a material handling expert who will be happy to work with you in developing the most efficient handling system possible.

There are Powell representatives serving the 54 largest industrial areas in the nation. For the name of the one nearest you check the yellow pages in your phone book or write direct. He'll be happy to give you the benefit of his wide experience with no obligation whatsoever.

THE POWELL PRESSED STEEL CO., HUBBARD, OHIO
ORIGINATORS OF ALL STEEL COLD FORMED MATERIALS HANDLING EQUIPMENT
(In Greater Youngstown)



Dept. 363

STANLEY

Magic Door **CONTROLS**

Cost as little as . . . \$347.25

Magic Door Controls open plant doors, keep them safely open while traffic passes through, then close them — all without hands or truck ever touching the doors. For as little as \$347.25 you can buy Stanley Magic Door Controls with standard operator that will open and close a sixty inch "in" and "out" door handling two way traffic. This operator works with pull cord switch and uses existing air supply and existing doors. For openings up to 84" — that's two feet wider — the cost is only \$367.50.



Many types of Stanley controls provide automatic operation economically to meet a tremendous variety of traffic requirements on new or existing doors that fold, swing or slide.

Magic Door Controls help maintain uniform temperature and humidity conditions, channel traffic flow, speed production. Representatives are ready to share their knowledge, based on over 20 years experience, in helping solve your problems.

The Stanley Works, Magic Door Division,
3016 Lake St., New Britain, Conn.

Please send full information on
Stanley Magic Door Controls.

Have representative call when in the area.

Company Name _____
My Name _____
Address _____
City _____ Zone _____ State _____



STANLEY TOOLS • STANLEY HARDWARE • STANLEY ELECTRIC TOOLS • STANLEY STEEL STRAPPING • STANLEY STEEL
Circle No. 31 on Reader Service Card for more information

AD LITERATURE

Continued

Requires Less Servicing

A bulletin No. DH-133-A available from the Wright Hoist Division of the American Chain & Cable Co. describes five key features of its Wright Speedway hoist which are said to give prolonged life to the equipment and reduce servicing to a minimum. Standard hoists are available in $\frac{1}{4}$ to 10-ton capacities.

Circle 2 on Reader Service Card

Woven Wire Slings

Greater safety can be maintained in hoisting operations through the use of woven wire slings, according to the illustrated catalog available from The Cambridge Wire Cloth Co. Along with complete price lists, the catalog provides necessary data on the uses, test ratings and suggested widths for specific loads.

Circle 5 on Reader Service Card

Reduce Wrapper Waste

In wrapping packages for shipment the difficulty in estimating the length of barrier wrapping material needed often results in substantial waste over a period of time and a large quantity of parcels. Derby Sealers Inc. will furnish complete details about its BW measuring dispensers which enable both the length and width of the wrapping material to be cut to desired dimensions with accuracy.

Circle 37 on Reader Service Card

Use Twine Or Wire

Gerrard Steel Strapping Division of U. S. Steel Corp. suggests selecting either twine or steel wire — which ever best suits the packaging job. They have available their "Blue Book of Packaging" and a booklet entitled "Gerrard B.S.M. Twine Sealing Machine." A Gerrard engineer also will make a survey of your packaging procedures without cost and will make recommendations that will improve your operations.

Circle 45 on Reader Service Card

Why 1 when you can transport 4

WITH THE MERCURY FORK TRUCK-TRACKLESS TRAIN SYSTEM

If your fork trucks travel over 150 feet (maximum)—you can save time...money...man power with the fork truck—"trackless train system."

In the system *trailers* do the transporting job—the fork truck loads the trailers... hauls the train... unloads and stacks at destination. And if your volume is large and distances great an electric tractor may be the best bet for the hauling job.

Let a MERCURY sales representative actually demonstrate the increase in efficiency the addition of trailers will make in your handling system. There is no obligation. Use the convenient coupon.

Mercury "Jeep" Fork Truck loads, hauls → and unloads A-310 Trailers at grocery warehouse.



Model A-310 Trailer (4000 lb. capacity) with the "Safety-Self-Coupler" for "Trackless-Train-System" operation.

← Mercury "Jeep" Fork Truck loads A-310 Trailer train to be hauled by a Mercury "Tug" Electric Tractor.

MERCURY MANUFACTURING COMPANY
4154 So. Halsted St., Chicago 9, Illinois

Have a representative call.
 Send copy of new 44 page catalog illustrating and describing complete MERCURY line.

Name. _____

Company. _____

Address. _____

City. _____ Zone. _____ State. _____

MERCURY
FORK TRUCKS • TRACTORS • TRAILERS

MERCURY MANUFACTURING CO., 4154 So. Halsted St., Chicago 9, Illinois

Circle No. 48 on Reader Service Card for more information

"I found a **TOUGHER HIDE**

PURCHASING AGENT

ON BUFFALO TREATED CONVEYOR BELTS

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OVER 200 SIZES — 35 WIDTHS — 7 THICKNESSES.

Write for FREE FOLDER

14 pages of sizes, types and prices

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58

AD LITERATURE

Continued

It Takes Power

In this machine age it takes lots of power to move materials quickly and efficiently. Wisconsin Motor Corp. has all its data compiled telling the story of its engines and the part they play in powering industrial trucks and other equipment. Wisconsin motors are air cooled, with heavy duty construction and compact design, which the company maintains adapts them to any job.

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Over 200 Sizes

Conveyor belts vary considerably in sizes, types, materials from which they are made, and uses to which they are placed. Buffalo Weaving & Belting Co. has a 14-page folder describing the more than 200 sizes, 35 widths and seven thicknesses. Different materials, too, they claim, require different types and surfaces in belt construction.

Circle 3 on Reader Service Card

Replaceable Solid Tire

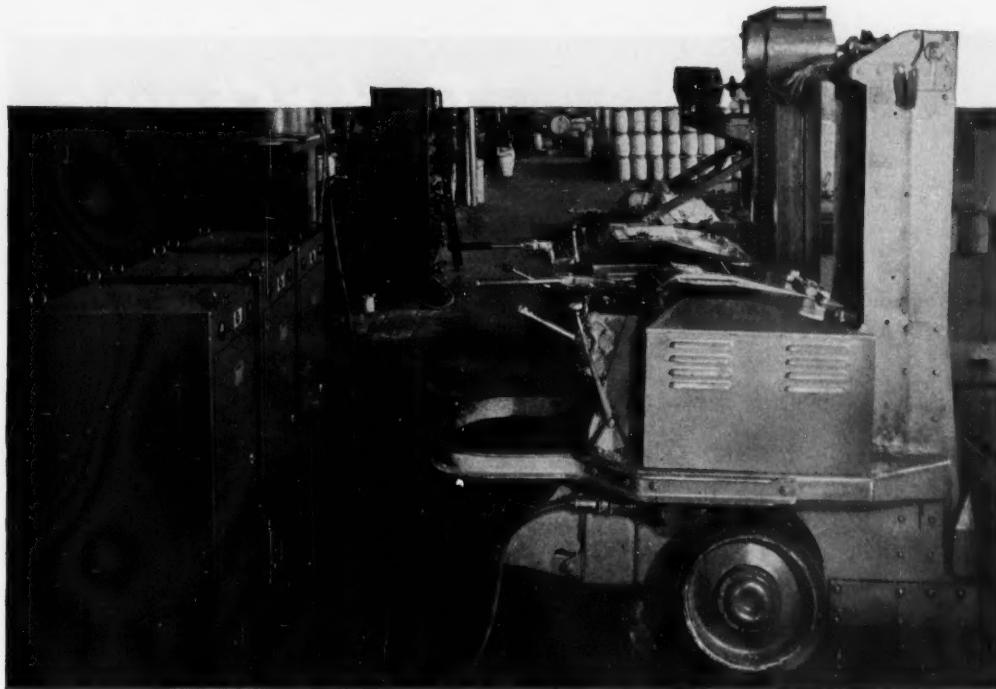
Rapids-Standard Co., Inc. will provide the published results of tests and actual comments of test users concerning its MB Wheel. Full specifications and price lists also are available. The wheel incorporates solid rubber tire bonded to a steel band. When worn out only the tire is discarded and a new one remounted in a matter of minutes. The wheel itself need not be returned for retreading or discarded as worthless in favor of a complete new assembly.

Circle 27 on Reader Service Card

Extra Heavy Duty Truck

In the complete catalog which can be obtained from Dico Co. there is described an extra heavy duty hand truck Model 80 which is said to withstand the most rugged use. Rectangular steel tubing is used in its framework and sturdy rubber-tired wheels permit free easy wheeling under the heaviest load strain.

Circle 9 on Reader Service Card



How work-area charging increases truck availability

Those long, empty-truck runs to central charging stations are wasteful and unnecessary. Not only do they make your trucks unavailable in the work area, but they waste battery energy, time and man power.

The new Westinghouse Rectox® Chargers give *on-the-spot* charging—eliminate this needless waste. Rectox Chargers can be easily and quickly moved to the most strategic points in your plant. They will operate anywhere there's an a-c outlet, and will service both lead-acid or nickel alkaline batteries. Saturable reactors in Rectox Chargers provide smooth, easily made adjustment of output by variation in inductance, thus eliminating the losses inherent in resistor control.

Operation is simple! No taps to change. Takes but a flick of a switch to establish the type of charging cycle desired. With a twist of a dial, the charging rate is selected. All else is completely automatic.

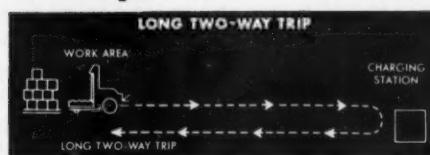
Learn the many other construction and operational features of these industrial truck battery chargers by calling your Westinghouse Representative or writing Westinghouse Electric Corporation, P. O. Box 868, Pittsburgh 30, Pennsylvania.

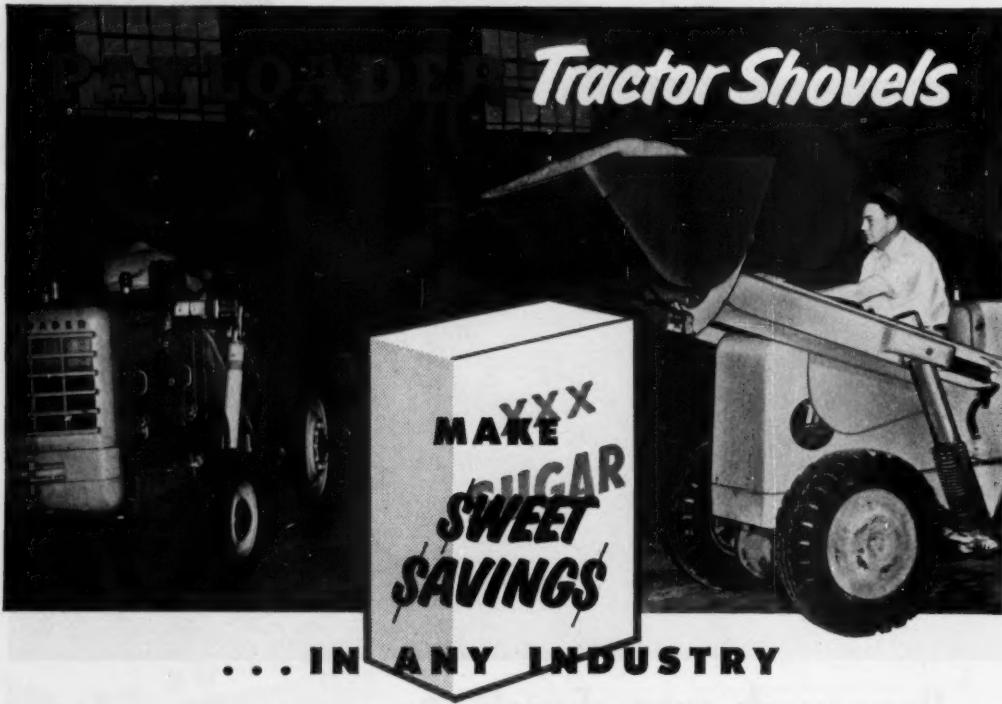
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YOU CAN BE SURE...IF IT'S
Westinghouse



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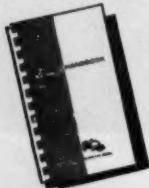




... IN ANY INDUSTRY

The sugar industry, like many others, has cut handling costs greatly and improved production methods with "PAYLOADER" tractor-shovels. Much raw sugar is now shipped in bulk instead of sacks because the Model HA "PAYLOADER" loads and unloads box cars and trucks of bulk materials so fast and efficiently. The cost of sacks, of sacking operations and of emptying sacks is also eliminated. Model HA's and larger "PAYLOADERS" also save time and costs in stockpiling of raw sugar and moving it from stockpiles to processing.

Sugar! Sand! Chemicals! Clay! Chips! — all kinds of bulk materials in all kind of industries are being



FREE HANDBOOK

tells how and where to look for signs of inefficient bulk materials handling . . . how to analyze, organize and set up an efficient handling system. Plus many useful tables and data. Write for "Bulk Materials Handbook."

scooped-up, unloaded, loaded, stockpiled, transported and spread by "PAYLOADERS" — indoors and outdoors — at great savings in time and costs. If *you* have bulk-materials to handle, it will pay you to get the full "PAYLOADER" story from your Hough Distributor or The Frank G. Hough Co., 731 Sunnyside Ave., Libertyville, Illinois.



Circle No. 46 on Reader Service Card for more information



DOUBLE-DUTY CRANE

... It Lifts and Stacks, Helps Unload Box Cars

CORDINATOR OF HANDLING activity in a large paper storage yard is a pneumatic tired crane. It roams over some 100 acres, piling bales neatly, and compactly in blocks about 30 feet high, 30 feet wide, and 80 feet long—and, in addition, provides valuable assistance in the unloading of railroad boxcars.

Located between two rail lines, and liberally criss-crossed with standard gauge track, the yard of Ohio Boxboard Company, in Rittman, Ohio, is devoted almost entirely to the storage of waste paper used in the manufacture of boxboard and test liner. The baled paper is brought to stacking locations by motor trucks, which are loaded from highway trailers. Unloading the trucks and stacking the approximately 1000-pound bales—and vice versa—is the primary function of the crane. A special, quick-action, manually operated grab secures the load.

Since weather is a serious problem, and no success-

ful means for covering the stacks has yet been devised, the crane operator—with guidance from men on the stacks—must swing the bales into as compact an arrangement as possible.

Much paper is, of course, stored in tremendous bins under the plant roof. Fork trucks and dock-side hoists accomplish the job of unloading rail and highway carriers for this storage. But to maintain an adequate supply for all seasons, the company requires this extensive outside storage.

With tracks all over the yard, rail cars are apt to be spotted at almost any location. To unload each one, the crane carries and places a sturdy wooden platform by the car door. A trailer of platform height then carries a fork truck to the platform so that it can unload bales from the cars. The crane finally moves the paper from the unloading platform to the yard stacking areas.

Better Material Handling

Will *Slash* Post Office Costs

That's what M. S. Stevenson* has been telling high Government and railroad brass as he discusses a new car-loading and in-process mail handling method. He notes here, also, benefits of the system to any firm shipping large quantities of small parcels.

THE United States Post Office Department with the job of loading and shipping over two thousand rail cars of parcel post mail every day, has a whopping handling problem on its hands.

The Department recognizes that an improved handling and shipping system would do much to reduce operating costs and—for the past several years—has been examining a new carloading and in-process handling method that should cut the job down to size. The idea under study teams up fork trucks with collapsible wire containers to replace the four-wheel hand trucks and canvas sacks which have been used in mail depots for the last 75 years. Tests already made indicate that mechanical handling of unit-loaded parcel post could:

- Save the Department about \$6,000 per day on loading charges by the railroads.
- Cut loading time, on an average, by about 50%.
- Cut unloading time averages by about 40%.
- Reduce individual handlings by about 50%.
- Practically eliminate damage and loss claims.

These tests, which have been made by ten major railroads cooperating with Post Office officials, are being reviewed now with an eye to full-scale use of the fork truck-container system.

Early Experiments Interested Washington

Until three years ago, mail had been shipped in the same way for three-quarters of a century—in canvas sacks. But in the spring of 1949 the Atchison, Topeka & Santa Fe decided to do some experimenting. The rail-

road began using a stacking type pallet to handle mail between Kansas City and Oklahoma City. Loose sacks were stacked on them. It was a good start; the only trouble was that the constant moving of the train caused sacks on one pallet to spill and interlock with sacks on adjoining pallets. This caused unloading headaches at Oklahoma City.

Even so, the AT&SF did generate interest in this idea within the Post Office Department. As a result, an official was sent from Washington to take a look at the experimental operation. By getting the Department interested, it was possible for the railroad to change from sacks to containers.



LOADING wire containers at the Spokane, Washington terminal. With a capacity equivalent to 14½ mail sacks, they can be loaded in only 20 minutes.

Next, a great deal of time and study was spent in trying to find the proper size container. This was necessary because the container was used in all types of mail storage cars, with many different obstructions (safes, working desks, wash stands, stanchions and stoves).

Another "must", set up by the Department, was that the mail should be stacked at least six feet high inside the cars. Because storage car doors are almost always less than six feet tall, it was necessary to find a way to load the mail into containers outside the car—and still end up with six vertical feet of mail. This was done by using a container measuring 40 x 48 x 36 inches deep, but with an overall height of 41 inches, including the pallet beneath it.

No "Duplication of Retention"

Containers now took the place of the sacks, so that there was no "duplication of retention", i.e., parcels were placed directly into containers rather than into sacks first.

Mail tests were run to find the sack capacity of these containers. They measured 40 cubic feet inside; but the problem was to find how many sacks the containers would hold, on an average, using only sackable parcels—those which can be easily placed into sacks and are not marked "fragile". ("Outsides" are parcels which are too large to be sacked, or are marked "fragile" and require special handling).

By systematic packing, it was found, an average of 112½ packages could be carried in a container. Loosely tossing the packages reduced this to 77. Using "outsides", it was found an average of 21½ parcels could be put in the containers. (Loading mail already sacked brought the average down to 14½ sacks per container.) The "high" was 26, "low" was 8. Weight was checked, too, and it was found that the average loaded container weighed just over 420 pounds—no load at all for our fork truck but—at 14½ sacks per



UNLOADING parcel post by a method that might have been pictured 75 years ago—or yesterday. New method cuts crew (7 men shown here) to one or two.

CONTAINERIZED vs. MANUAL HANDLING

Man-hours used with Container Method	Loading	Unloading
Union Depot, St. Paul	.56	.50
Union Sta., Chgo.	2.53	2.31
King St., Seattle	3.50	3.00
G. N. Sta., Spokane	2.31	1.40
Penn. Sta., N. Y. C.	2.12	3.27
West Side Sta., N. Y. C.	1.35	2.14
Union Sta., St. Louis	2.54	3.50
Union Sta., K. C., Mo.	2.49	2.25
Dearborn Sta., Chgo.	2.31	2.25
La Salle Sta., Chgo.	2.03	1.41
Average Man-Hours	2.24	2.24

(50 foot cars used, 56 containers per car)

Manual loading of storage cars takes 8 to 12 hours

Manual unloading of storage cars takes 6 to 10 hours

container—quite a job at one sack per lift per man. Various test runs were made: New York to Chicago via the New York Central and the Pennsylvania; New York to St. Louis via the Pennsy; Chicago to Kansas City via Sante Fe; from Chicago to St. Paul, over the Chicago, Milwaukee, St. Paul & Pacific, then the Great Northern from St. Paul to Spokane and Seattle.

Time Tests Proved Economies of System

In extensive tests made to check loading and unloading time on cars containing mail, the St. Paul Union Depot has consistently had the best time for loading and unloading—less than one man-hour for each operation. This does not include burden for supervision, nor time necessary to get the equipment and return it.

At ten stations where tests were made, the average man-hours used came out the same for both loading and unloading—2 hours and 24 minutes. These figures are based on the use of a 50-foot car with 56 containers per car. The time of loading and unloading storage cars manually varies greatly, but most railroad men concede it takes, with current methods, 8-12 hours to load and 6-10 hours to unload.

Full-Scale Adoption Would Require Changes

To date, a full-scale adoption of the container-fork truck system has not been made, for several reasons. One obvious cause for the hold-up is the recent change in administrations. Studies made by former Post Office

(Continued on page 95)



HEAVY TRAFFIC AREA well organized to eliminate chances for those snarls and collisions which produce delays and damages. This floor, marked with plastic film tapes, is in a factory where they know that . . .

FLOOR LINES cut plant losses

"BOULEVARD" separates trucks and pedestrians. Double striping, accepted as a highway standard, is readily understood wherever used in a plant.

HOW do floor lines rate in your plant? Are they laid down as a bothersome chore to conform to safety rules—maybe once or twice a year, if floors *need* them? Are they allowed to become obliterated because the job of keeping them up is back-breaking, time consuming and must be done in overtime hours? What is their real economic value to your operations, anyway?

As for the last question, the experience of a large manufacturing concern is enlightening. The company established clearly defined lines around machinery and removed the helter-skelter of parts boxes, finished, unfinished items, and other miscellany. It laid out definite aisle ways reserved for truck traffic and penalized those who violated plant traffic regulations. Then, a time check of trucking operations showed that efficiency in the department had increased 25 percent while cost of its overall operation had been reduced by almost the same percentage.

As far as the difficulty of maintaining effective floor lines is concerned, that has been largely eliminated by machinery and materials which make the job semi-automatic, in two- or one-man operation. There are plastic, brass and polished steel disks that can be set flush in floors or slightly rounded; self-adhering plastic tapes; and paints which can be applied regardless of oil and grease problems and dry so quickly that production need not be interrupted. Both plastic tapes and paints come in a wide enough variety of colors to satisfy any plant or manufacturing code.

Machine Marking Is Fast

Manufacturers of marking machines say their equipment will do a painting job up to 20 times faster than hand methods. To show the savings possible a cost study was made on line marking in a rather large company. Normal cost to the factory, per year, for paint and labor had averaged \$18,750. Through the use of line marking equipment, the firm was able to reduce this to \$7,860 per year. With such a tremendous saving, the cost of the equipment was negligible, the initial outlay having paid for itself in a matter of days.

Proportionately great savings can be realized with any size company. It has been said by one authority on

(Continued on page 99)

GRAVITY FEED, light-weight machine makes continuous or skip lines 2, 3 or 4 in. wide through use of interchangeable carriages.



POWERED paint spraying equipment, which can be designed for safe usage in almost any kind of plant. Note offset applicator for close marking control.





BULK MATERIAL is unloaded from freight cars by a vacuum type conveyor system for delivery to storage bins. Capacity of system is 2000 bushels of malt or 25 tons of rice or grits per hour.

CONTROL OF FLOW of material is entirely from this master control board. It contains all "start" and "stop" buttons and a flow diagram with indicating lights to reveal the routing of material.

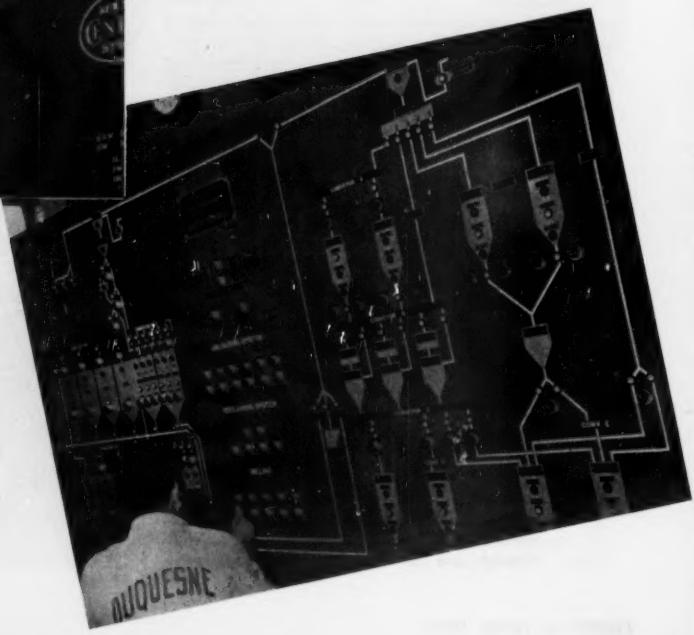
Bulk Material Goes *Where & When*

THE Duquesne Brewing Company, Pittsburgh, Pa., by employing new remote-controlled, pneumatic bulk-handling techniques, eliminates virtually all manual handling of raw materials at its recently completed eleven story, 2,000,000 barrel brewhouse.

The principal components of this installation are two giant pneumatic conveying systems. One unloads cars for delivery to storage bins, the other reclaims from storage and delivers to processing equipment.

Cars To Storage

Bulk material arrives in box cars and is unloaded at any one of three car stations by a vacuum type



You Want It...By Remote Control

conveyor system. The capacity of the system is 2000 bushels of malt or 25 tons of rice or grits an hour.

Two flexible metal hoses, equipped with pick-up nozzles, connect to stationary pipe-lines which lead to a receiving filter on the eleventh floor. A positive-pressure type exhauster creates the powerful flow of air necessary to propel the material through the pipe-lines and into the filter. A rotary airlock discharges material from the filter into a Richardson automatic receiving scale.

The filter, in which solids are taken out of the air stream with a 100 per cent visible dust retention, is of the continuous, fully automatic type.

From the automatic scale, malt is passed into a cleaner, which in turn discharges into the steel storage bins through a train of distributing conveyors.

Materials other than malt are by-passed around the

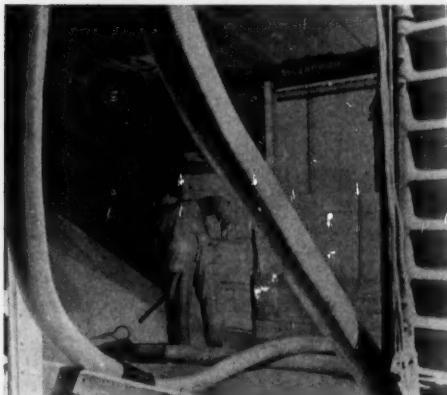
cleaner on their way to storage. A motorized two-way gate directs material into cleaner or by-pass.

There are a total of 14 huge storage bins, 11 for malt, the others for grits and rice.

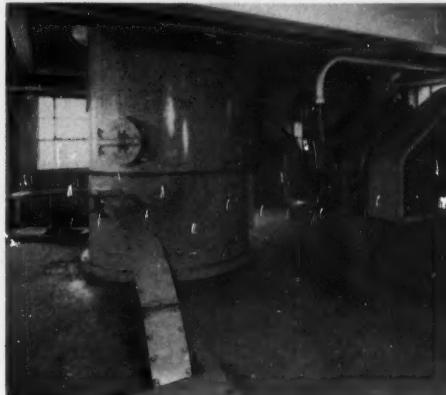
The flow of material is directed remotely from a master control board. On this board are mounted all "start" and "stop" buttons, as well as a flow diagram, with indicating lights revealing the routing of material.

Reclaiming To Process

A second pneumatic system withdraws material from the bottom of the storage bins on the third floor and delivers it to a reclaiming filter on the eighth floor, from which it is directed to process by means of mechanical distributors. This system has a capacity of 750 bushels of malt, or 10 tons of rice or grits an hour. Each storage bin has a motorized withdrawal



FLEXIBLE METAL HOSES with pick-up nozzles reach into cars for unloading. They connect to stationary pipe lines which carry the malt, rice or grits up to . . .



. . . A RECEIVING FILTER on the eleventh floor. A positive type exhauster, right creates powerful flow of air necessary to propel material through pipe lines.

Bulk Material Where and When



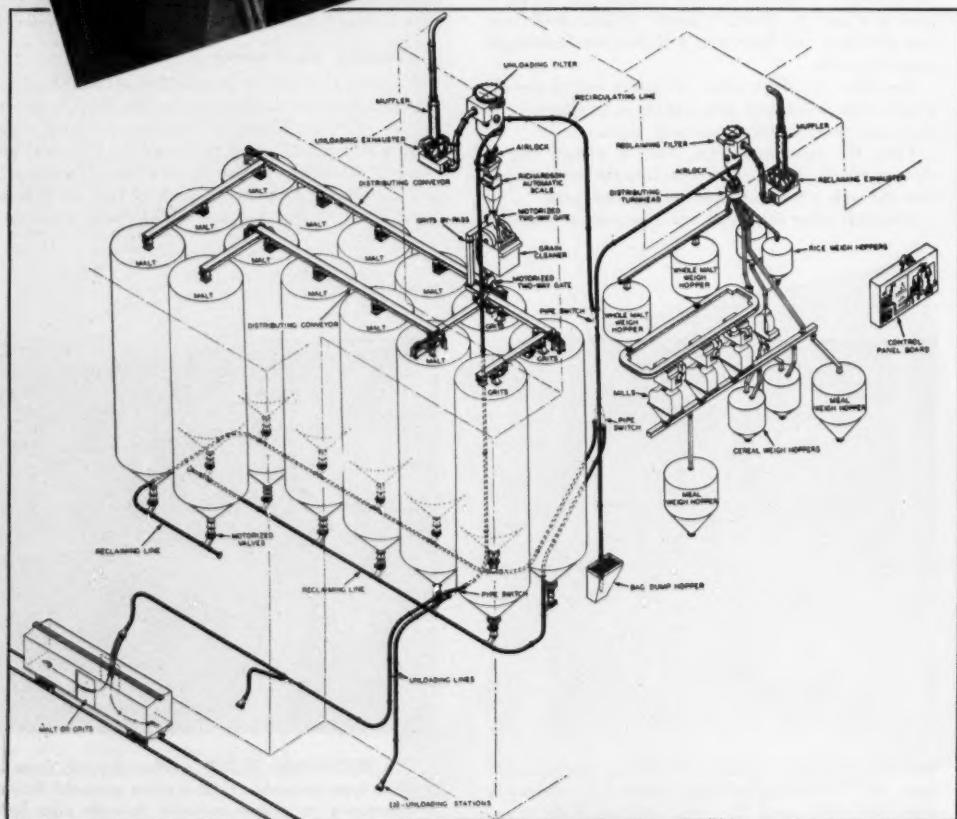
valve, operated from the master control board.

The reclaiming filter is also of the continuous, fully automatic type. It discharges to any one of five destinations by means of a turnhead. Materials feed by gravity to the malt mills, scale hoppers, cereal cookers, etc.

Additional Features

In addition to car unloading, this particular system also is equipped with a specialty bag-dump hopper for the handling of such raw materials as ground cereal or caramel malt. This hopper connects with both the unloading and the reclaiming filter, making it possible to send these materials either into storage or directly to process.

MOTORIZED TWO-WAY GATE (left), directs material from scale into cleaner or to by-pass which leads to storage. The drawing, (below), shows the entire system which has virtually eliminated all manual handling.



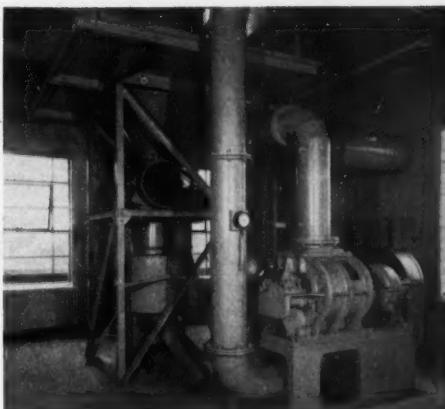
You Want it . . .

The unloading system, which normally delivers to storage, is also arranged for recirculating material from one bin to another.

Pipe switches are a convenient means of selecting any one of several branch pipes. Several of these switches are used in this installation. Electrical interlocks have been employed throughout the system to rule out human error through automatic sequence starting.

The storage bins are equipped with high material-level indicators, which energize indicator lights on the control board, and which also shut down the system when a bin has become full.

Our thanks to the Fuller Co. for information and photographs contained in this article.



RECLAIMING FILTER, exhauster and drive motor for conveyor system which withdraws materials from storage and delivers them to process. Note turnhead at bottom for discharging to any one of five destinations.



PIPE SWITCH provides a convenient means of directing flow through any one of several branch pipes.



REMOTELY OPERATED DISCHARGE VALVES are installed on bottom outlet of storage bins located on the third floor of the building. Up to 750 bushels of malt or 10 tons of rice or grits can be removed per hour.

An integrated handling system for

Efficient Two-Story Warehousing

Here's how operations on two floors can be coordinated to meet both anticipated and potential peak loads if sufficient flexibility is established in the handling plan.

HOW HANDLING DIFFICULTIES inherent in a multi-story building can be largely overcome has been shown by a firm required to do a warehousing job on two floors. When the company planned and put into effect an integrated system, it achieved a 15 percent saving in handling—through better utilization of personnel, live storage of commodities, and better control and speed in filling orders—plus many intangible

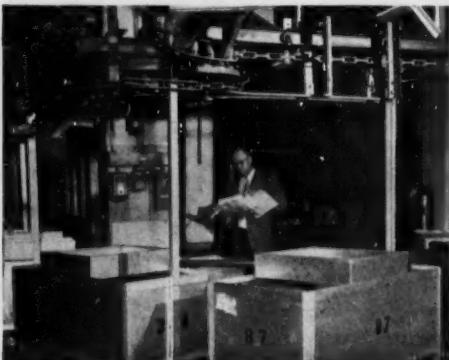
gains which resulted from better service to customers.

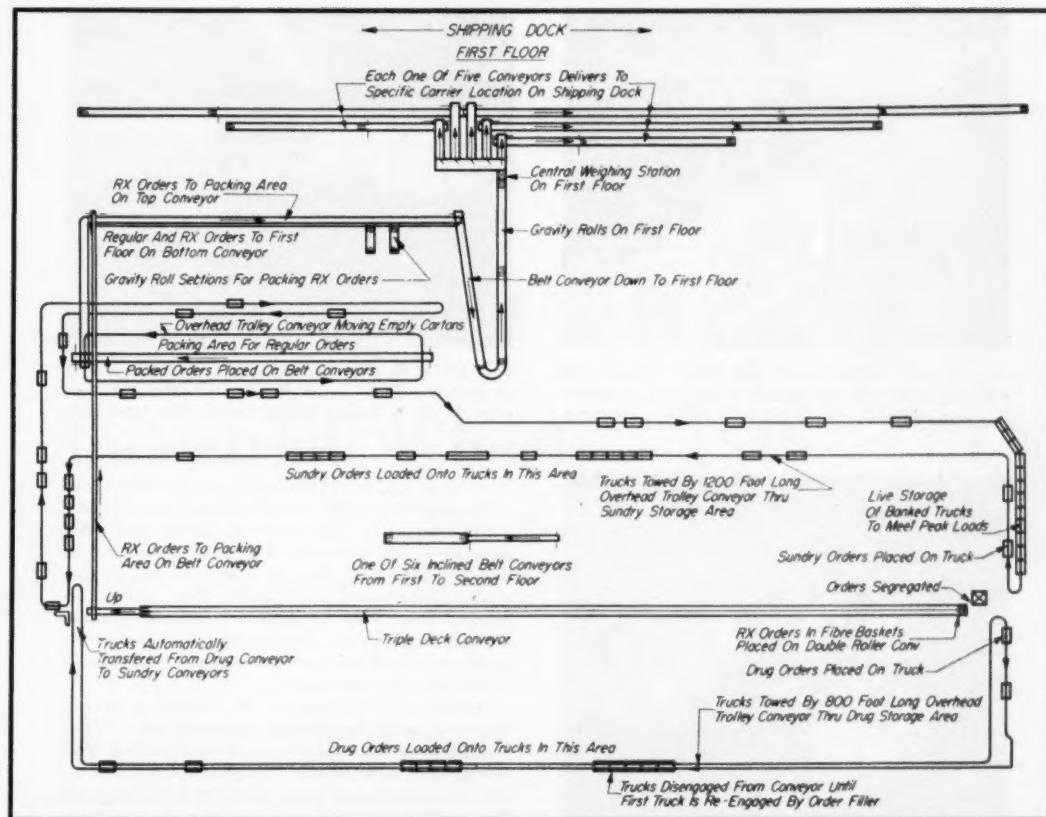
The Brunswig Drug Company, distributor in Los Angeles, had to develop a plan to handle orders which had swelled to some 1500 daily. Key steps in the plan called for: (1) the modification of existing equipment; (2) the installation of additional conveyors; and (3) the shifting and consolidation of departments.

(More on page 72)

CARRIED BY BELT, orders arrive via chute, center. From left come trucks loaded in Drug Section for automatic transfer to conveyor chain from Sundries Section, which carries loads from both sections to Packing Dept.

DISPATCHING regular orders (foreground): Trucks with orders for drug section go to left; those for sundries to the right. In center is Rx order dispatcher at starting end of the long order-filling belt conveyor.





MASTER PLAN on which handling system was devised after departmental reorganization was determined.

CONSTANT SUPPLY of cartons provided to packers by overhead conveyor. Brought to this station on trucks with orders, cartons are those in which goods were delivered. Belt unit removes packaged orders.

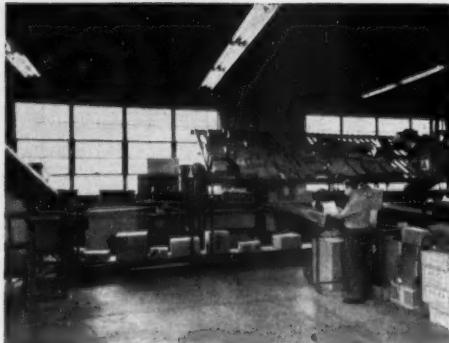


TRIPLE-DECK conveyor carries Rx orders, on bottom, to far end of warehouse; fibre baskets, on upper levels, through filling area. Inclined belt goes to packing area.





BELT BELOW transfers packaged orders to faster belt which separates cartons enough to go down on escalator belt, around 90 deg. turn without jamming.



BASKETS of Rx orders arrive on belt left to be packed at stations, right. Lower belt, continuation of conveyor bringing packed regular orders, also takes Rx's.



ROLLER conveyor feeds packages to transfer table on scale platform for weigh-marking & distribution to proper belt leading to carrier-designated dock area.

PACKAGED orders from above make 90 deg. turn enroute to weighing & shipping. This is full-pack area on first floor where lift truck handles palletized loads.



Now orders are filled in continuous, uninterrupted flow.

The sequence starts in the Telephone Sales Department, where sales girls write up orders and place them on a belt conveyor which carries them to the schedule desk. Next they are passed on to the Tabulating Department. Card clerks then attach pre-punched commodity cards for the required quantity for each item. After a checking operation, commodity cards are sorted into the same sequence as the items are stored in the warehouse.

Orders, when delivered to the warehouse by belt conveyor, are in two general classifications: (1) Rx, special, generally small orders which are filled from the shelves on the second floor; and (2) regular orders, which are larger in size and filled from the second floor shelves or in full pack lots from the first floor. When received in the warehouse all orders of both types are placed in a small tray, which is loaded onto the bottom belt (the normal "return") of a triple deck conveyor to carry them to the opposite end of the building.

The Rx orders are placed in fibre baskets which travel on the top conveyor deck, a double width roller unit above the belt conveyor. On each side of the conveyor are Filler-Checkers assigned to successive sections of the banks of shelves. Each Filler-Checker places items from his section on the top tray of the basket and pushes it along to the next station. A Filler-Checker fills his part of the order only after checking the items filled by the man ahead. If no mistake has been made, the previous items are removed from the tray and placed in the basket. The last two men at the end of the line check each other—thus there is a double check on all orders that are filled. As soon as the order has been filled, the basket is transferred to the second deck, which is the "normal" carrying belt, and continues in the same direction under power. The basket, from this point, is carried by a series of belt and roller conveyors to the Rx packing area.

Regular orders, when separated from the Rx orders

(Continued on page 138)

Types, Construction and Selection of . . .

Industrial Wheels

WHEREVER there is movement, there generally is a wheel at the bottom of it all—and the selection of the correct wheel for the job is as important as the selection of the truck which moves on it.

Choosing the right industrial wheel for a job may depend upon a number of things. However, the basic factors to consider are the weight of the load, type of floor or terrain the vehicle is to operate on, speed of the vehicle and the amount of shock the load and floor can safely be subjected to.

Wheel Types

There are certain basic wheel types available, although many manufacturers make specials which are adaptable to special plant conditions. Among these are the aluminum waterproof wheels adaptable to food processing plants where cleanliness is a factor, special static conducting wheels for use where explosives or highly volatile substances are handled and a score of other special wheels. The basic wheel types are:

Aluminum, Plain Tread. Aluminum, plain tread wheels are made of an aluminum alloy which affords light weight and reduces dead weight of the equipment. Non-sparking qualities make them safe for use where explosives are handled. They are available in all-metal or rubber tired.

Grooved Wheels. Grooved wheels are made of semi-steel and are used mainly on casters for assembly line operations. They are "V" grooved for use on

tracks and often have a wide tread which permits off-track operation.

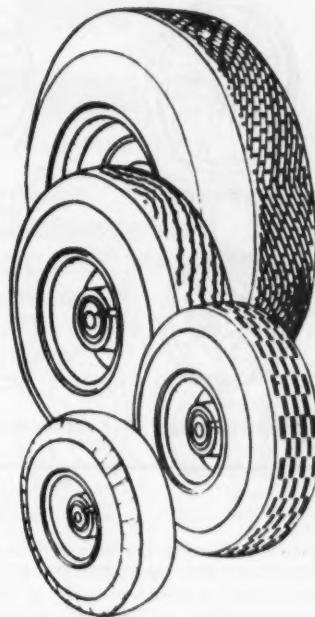
Malleable Iron Wheels. Malleable iron wheels are made of high-tensile strength malleable iron and give good resistance to breaking or cracking under severe shocks. They have a high load limit and are adaptable for use on rough floors, railroad crossings or other rugged conditions. They are available in all-metal and rubber tired.

Molded Composition Wheels. Molded composition-wheels are molded of hard rubber and fibre compounds. They are available with either hard or soft tread molded to the hard core and are suited for light and medium duty loads. They are noiseless, floor protective, non-sparking and offer resistance to water, oils and most acids.

Semi-Steel Wheels. Semi-steel wheels are cast wheels which are low in initial cost. However, since they are not suited for severe shocks, application is limited to fairly smooth floors. They may be either all-metal or rubber tired.

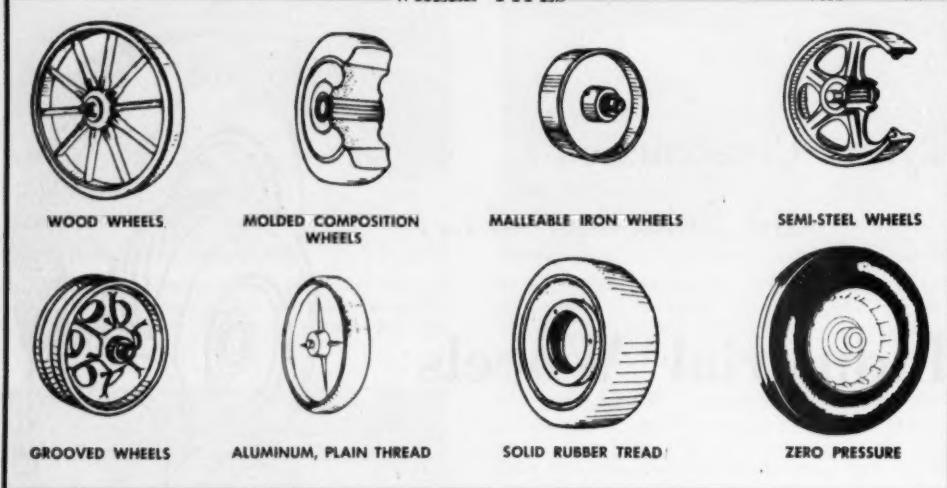
Solid Rubber Tread, Metal Cored. Solid rubber tread, metal cored wheels are versatile and are

(More on next page)



Industrial Wheels . . .

WHEEL TYPES



widely used, being available in both pressed-on and molded-on (sometimes referred to as cured-on) types. Both types of tread are made of low roll-resistant, shock-absorbing rubber which protects the vehicle, load and floors. It is noiseless in operation and lends itself to easy handling. The pressed-on type has the tread molded to a metal ring which in turn is pressed onto the metal core. The molded-on type has the tread molded directly to the metal core. Both types have high load capacities and low sway on high lifts and turns. They are available in smooth and a variety of special treads.

Solid Rubber Tread, Metal Side Plates. Solid rubber tread wheels with metal side plates are variations of solid rubber tread wheels with metal cores, and have the same characteristics. They are constructed of heavy gauge steel discs which form a wheel. The metal disc construction lends itself to light weight and easy replacement of tires.

Spoke Type Wheels. Spoke type wheels can be furnished with either steel spokes of various sizes and shapes or with wood spokes. Even though the rubber tired wheel is generally replacing the steel spoke and rim type, there still are a number of applications where this type of wheel is better and more economical than other types. Wheelbarrows, agricultural equipment, trash cans, push carts and heavy equipment such as sugar cane carts are among these applications.

Wood Wheels. Wood wheels are hardwood wedges riveted together with two steel side plates so that each wedge is secured by at least one rivet. Wedges are so arranged that end grain wood forms the tread. Features are easy rolling, high load capacity,

non-sparking and a fair degree of floor protection.

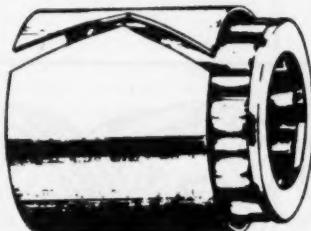
Zero Pressure or Semi-Pneumatic Tread Wheels. Zero pressure or semi-pneumatic tread wheels have integral type tires and do not require air, but rely on the resiliency of the rubber for cushioning. This type of wheel and tire combination is suited best for low speed applications such as hand trucks, dollies, wheelbarrows, light-duty agricultural equipment and other material handling equipment. Impressions in the wheel engage or match lugs on the tire. This permits the two to be securely locked together at assembly to insure against slippage, particularly when used in a drive application. Since there is no air pressure to hold the tire against the rim flanges, another feature is that they are puncture-proof and give stability on high lifts.

Bearings and Hubs

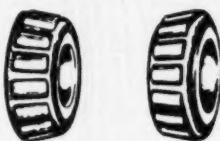
When selecting a wheel, the wheel bearings are an extremely important factor. To select correct bearings for a particular application, the following practice is recommended: for slow speeds and light loads, self-lubricating bearings or ball bearings are satisfactory; for slow speeds and medium loads, straight roller bearings will be adequate unless there is a thrust condition, and then tapered roller bearings should be used; but for high or low speeds and heavy loads subject to side thrust, tapered roller bearings are necessary. Bearing construction used on most wheels can be divided into these five categories:

1. Plain Bearing, which consists of either a cast iron wheel center-bored to correct axle size or, as is most common, an inserted bronze or fused metal bush-

BEARING TYPES



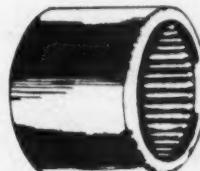
Straight Roller Bearing



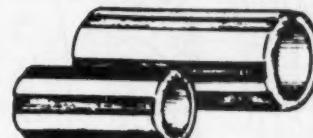
Tapered Roller Bearing



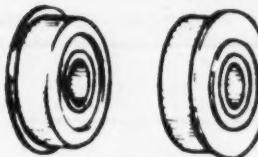
Combination Ball & Roller Bearing



Needle Roller Bearing



Self Lubricating Bearing



Ball Bearing



Plain Bearing

ing (oilite, a powdered metal type bushing, being extremely common for this type of application).

2. Ball Bearing, which has commercial ground or unground bearings of the press-in flange type with hardened races on which the wheel rotates, has gained rapid and acceptable recognition.

3. Straight Roller Bearings, which usually have a split sleeve into which the assembled bearing is inserted; then the complete assembly is inserted into a wheel center. A disadvantage of this type is that the bearing roller actually rolls on the axle shaft and unless a hardened shaft or bushing is used, rapid and excessive wear will develop.

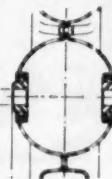
4. Needle Bearings. Operation and assembly of needle bearings is similar to straight roller bearings, except that the needles (small rollers) are encased in an outer shell. One disadvantage: the needles may work loose from this outer case under extreme conditions and cause premature failure.

5. Tapered Roller Bearings. Tapered roller bearings are best suited for extreme and heavy duty service. Tapered rollers, incorporated into a formed race, roll on both an inner and outer tapered and hardened core. When this construction is used, accurate and positive adjustment must be provided or they will not function properly.

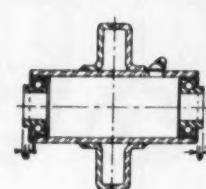
To determine the hub type for a particular applica-

(More on next page)

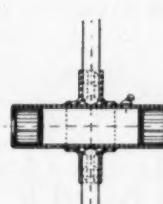
HUB TYPES



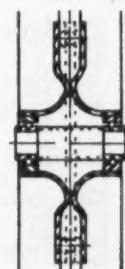
Integral Type



Demountable Type



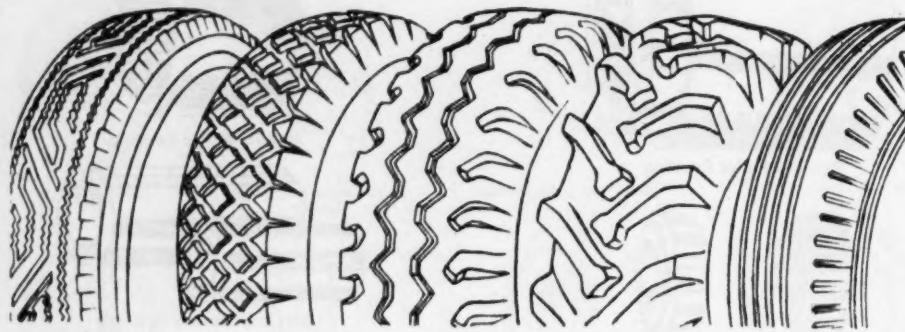
Tubular Type



Extruded Type

Industrial Wheels . . .

TIRE TREAD TYPES



ALL PURPOSE

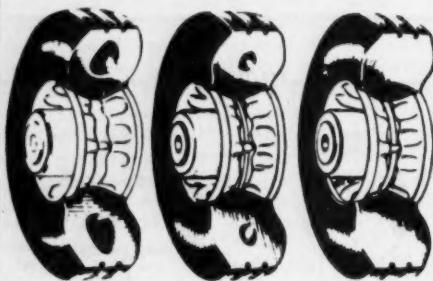
TRACTION

RIB CLEAT

CLEATED

RIB

SEMI-PNEUMATIC TIRE TYPES

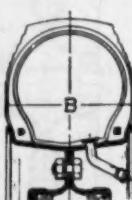


Light Duty

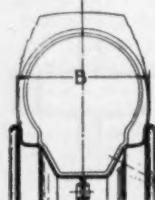
Heavy Duty

Extra Heavy Duty

PNEUMATIC RIM TYPES



Flat Base



Drop Center

tion, it is important to consider first the conditions of operation. Light or heavy loads, high or low speeds, thrust conditions, terrain and dirt conditions are some of the things which must be taken into account.

The two hub types most generally used are the integral type and the demountable type. The integral type is desirable for its simplicity—however, it likewise fixes the hub length, whereas the demountable type allows for flexibility of hub lengths. These hubs can be supplied with straight roller, tapered roller, ball, plain or self-lubricating type bearings.

Pneumatic Type Wheels

The pneumatic type wheel has a separate tire and tube, similar to the conventional automobile wheel. Designers are turning more and more to the use of pneumatic wheels and tires where materials are required to move faster and easier—with less breakage and spillage. Additional cushioning protects fragile loads and delicate equipment. They will roll easily over soft and uneven surfaces, reduce worker fatigue and save floors and floor coverings.

On powered equipment, pneumatics provide traction that is highly desirable, particularly since there are various types of tire treads available. Basically, there are five different types of tire treads. They are:

All-Purpose Type, for general use and for easy operation in low or high speed applications;

Traction Type, which gives maximum traction on drive wheels to move full loads;

Rib Cleat Type, which rolls easily on hard surfaces and gives extra traction on soft terrain;

Cleated Type, with angle action traction for power driven hand operated equipment;

Rib Type, with high flotation and non-skid tread for slippery surfaces.

The two types of rims used with pneumatic tires are

the flat base and drop center types. Preference is determined generally by the use. The flat base or split type is used where the demountable feature is required—in other words, where the wheel and tire can be removed from the hub without disturbing the bearing adjustment.

The drop center type wheel is a split type wheel only in the sense that the tire can be removed easily without disturbing the rim setup. Otherwise, it would be necessary to remove the tire over the rim so that the tire beads drop into the well of the rim, allowing removal of the tire.

One feature that the flat base rim has that is not found in the drop center wheel is stability. The absence of the well to permit the tire toe to slip into, particularly on high lift and high speed loads, produces this stability.

Solid Rubber Treads

Basically, solid rubber tread can be divided into five categories. They are:

1. Standard Cushion Tread, normal durometer 60-70, is used almost universally in all standard service on free rolling wheels. It has excellent cushioning qualities, low draw bar pull and maximum resistance to permanent set. The resilience of this tread provides a high resistance to cutting and chipping under severe service conditions.

2. Soft Tread, normal durometer 40-45, is used only on specific operations where high resiliency is required.

3. Oil Resistant Compound is used in place of standard rubber tread where oils, greases or other solvents which are highly injurious to rubber compounds are present. It is also resistant to high temperatures, cutting, chipping and abrasion. It has high resiliency, minimum deflection, and sufficient cushion for low draw bar pull.

4. Fibre Type Tread, which is a fibre reinforced rubber compound, is designated for heavy duty service. Such compounds are normally used under operating

(Continued on page 96)

A Manufacturer's Opinion of Today's Industrial Tire Standards

by E. C. Shingleton
The B. F. Goodrich Co.

I don't know how many different models of material handling trucks, tractors, cranes, etc., there are in the industry. I do know that these units for material handling have certainly changed square feet to cubic feet. They've really put a hand in handling the likes of which was undreamed of as late as 10 years ago.

Instead of counting sheep, I lie awake nights trying to figure out why such fine equipment, designed for efficiency purposes, requires 153 different sizes, 4 or 5 different compounds, a great variety of treads, etc., etc., etc. By simple third-grade arithmetic, I'm forced to conclude that there must be 700 to 800 combinations of tires.

When I finally fall asleep I dream pleasant dreams about the nation's vast number of automobiles that roll beautifully on 12 or 13 sizes of tires—all the many kinds of trucks that need only 26 or so sizes. Even the big earthmoving jobs need only 20 or 30. And farm tractors, those big rear tires only about 34 sizes, and on all the hundreds of varied types of farm implements, somewhere around 17 sizes serve to meet demands.

Yet, for materials handling trucks, we have to have 700 to 800 sizes and types to fill those holes that roll the trucks that carry and lift the nation's loads. I'm told there are 1,527 reasons why all these sizes and types are needed. I shudder to think that our line may yet have to be expanded to include the other 700 to 800.

Imagine a $6.70 \frac{1}{4} \times 15 \frac{3}{8}$ tire on your Ford or Chevrolet, or an $8.90 \frac{1}{2} \times 15 \frac{5}{8}$ on your Cadillac. I'll bet even on your garden wheelbarrow you never figured on buying a $4.00 \frac{3}{8} \times 8 \frac{3}{16}$ tire. Imagine a rear tractor tire, size $11 \frac{3}{32} \times 38 \frac{25}{100}$.

I'm told industrial trucks are different. That every manufacturer

has different know-how that requires close wheel tolerance and fit. Frankly, they all look pretty much alike to me. The know-how must be pretty well hidden to look so much alike, yet require all those tires to fill those little holes left over for wheels.

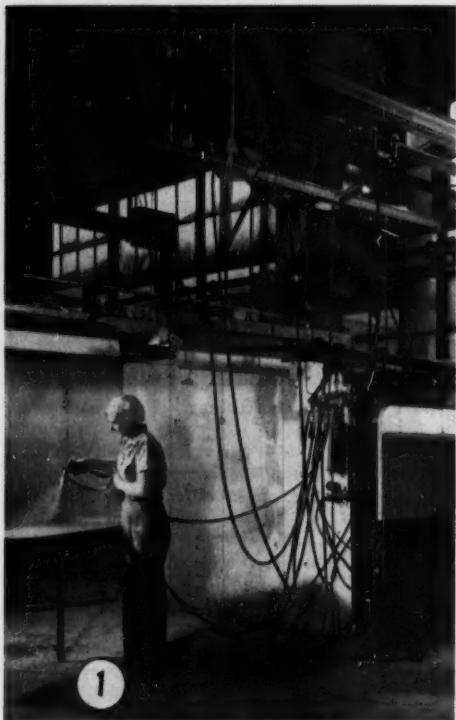
Those holes we fill with all the tire we can pack in, remind me of a guy painting a floor and painting himself into a corner. The equipment is designed to the nth degree, within a quarter of an inch of its life for utmost performance. When it's all completed, it then must be made to roll. Sometimes I wonder if those wheel and tire holes aren't made with brace and bit. The variety of bits would probably explain the variety of tire sizes needed.

But all joking aside, those quarter-inches cost us all money. Half our plant is filled with tire molds. Half the other is filled with different specs for compounds, designs, etc., etc., etc.

The paper work, inventories, people, production, shipping and you-name-the-rest complications means COSTS. Multiply these same headaches to similar ones of the truck manufacturer, sales, service and replacement factors and you've really added plenty of hidden \$\$\$, and WE ARE ALL PAYING FOR IT.

Naturally, we've got to make a little profit, so it's really the truck manufacturer and their customers who have to pay these quarter-inch hidden \$\$\$. No matter how you roll it, carry it, stack it or palletize it, WE ALL PAY THROUGH THE NOSE FOR THOSE ODD QUARTER INCHES.

As you've obviously figured out by now, I'm not an engineer, but I'll bet my bottom dollar, that with a little compromise here and there we could cut those 153 sizes down to 36 and NOT ONE TRUCK MANUFACTURER WOULD LOSE A SALE.

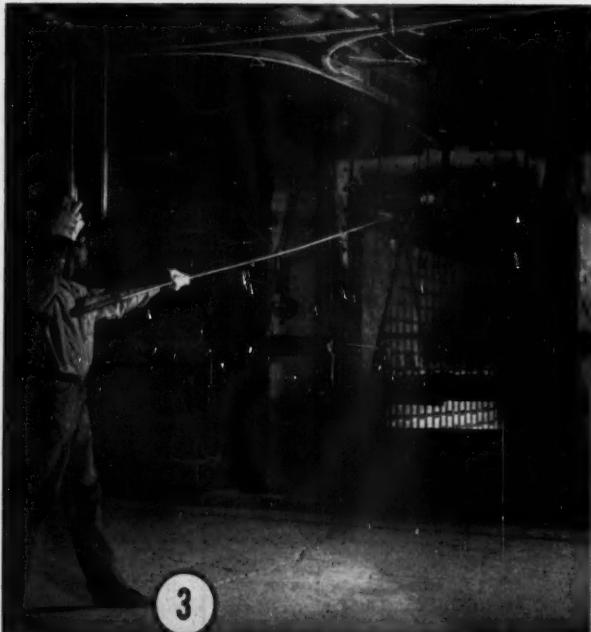


1

Handling Controls



2



3

1. GRAVITY BUCKETS are used in spray booths due to the large variety of colors used in production work. After spraying, products are hung on burning fixtures.

2. MONORAIL carries materials throughout entire plant. Signs shown here will be on same burning fixture for their entire trip through all manufacturing operations.

3. SPECIAL RACK is used for small parts not adaptable to hanging on fixtures. Note that monorail runs directly over furnace and rapid in-out movement for accurate control of cycle is possible.

4. BURNING FIXTURE is made of alloy which can safely withstand 1300F to 1800F temperatures in the furnace. Radiation spot at lower left works in conjunction with potentiometer (see illustration No. 3) to control furnace temperatures within close limits.

Provide Precision Timing

Through a hot, delicate process

IN few industries is good handling more important and harder to achieve than in the porcelain enamel industry. Products on which porcelain is being applied must be handled as little as possible, and with utmost care. Due to the nature of the firing operations, precision timing is a must.

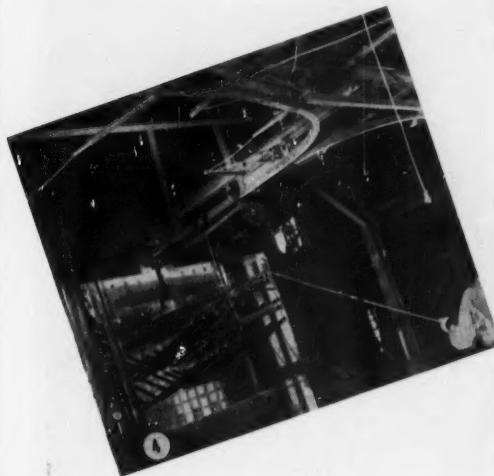
At Barrows Porcelain Enamel Co., Cincinnati, the optimum in handling efficiency for a porcelain enamel plant appears to have been achieved. Primarily a job shop making custom built signs, the company also makes architectural panels and signs in quantity. At any given time, work in process may vary from heavy pieces to lightest gauge signs. All are handled on one monorail system.

Scheduling is a difficult task since every attempt is made to keep material moving once a job has been started. For instance . . . a three-color sign makes four trips around the shop. Each time around, it must arrive at proper work stations at exactly the same time as proper enamel, stencils, etc., or considerable time will be wasted.

Because of the large variety of colors used in production work, seven spray booths are available for the application of both ground and cover coats. Walls of the booths have been constructed of porcelain enamel steel to facilitate cleaning. The large number of colors and great deal of changing from one color to another has resulted in a decision not to use pressure tanks to hold enamels. Instead, gravity buckets are used, and from four to as many as ten buckets may be suspended at one booth at a given time.

Practically all ground coat is sprayed; due to the size and shape of the pieces generally run. Formerly, after spraying, it was necessary to carry material on wooden racks to a dryer. Then, each item

(Continued on page 138)





Capacity Storage For *LOW* Ceiling Areas

LOW CEILINGS and obstructed over-head areas often make efficient usage of storage space difficult—and good housekeeping a constant chore.

Although it is occasionally possible to re-route pipes and conduits, these are, of course, costly operations. (Replacement of low-hanging lighting fixtures is not so difficult and can frequently gain valuable space.) The happiest solution is the installation of storage

units that will occupy the area as fully as possible—short frames, drawer and bin compartments, and containers which will fit under beams and pipes, below windows, or in niches caused by overhangs.

Especially for the storage of small parts and components, when space is limited, it is generally desirable to stock smaller quantities in "active" areas and keep the bulk in reserve in an area not so critical.

IMMEDIATE IMPROVEMENT in efficiency and morale was reported by Square D Co. when corrected handling problem in low-ceiling room.



MAXIMUM UTILIZATION of space beneath balcony provided by heavy-duty steel shelving to store pipe fittings in plumbing supply area.



BASEMENT STOCK
section of large
brass mill employs
tiering-type metal
dump boxes to gain
full usage of space
beneath low hanging
pipes.



Live storage of raw materials as well as parts is also a solution for highly active storage areas. Superstructures to fit almost any requirement can be built or supplied on floor trucks to provide compact, efficient storage and readily mobile supply to production areas. Castered and wheeled racks are also produced for these purposes.

In the following pictures and brief descriptions are some typical installations where manufacturers have

used standard and built-to-order equipment to gain maximum effectiveness from storage areas with structural limitations.

For cooperation in this survey, FLOW thanks American Metal Products Co., Aurora Equipment Company, Elizabeth Iron Works, Lyon Metal Products, Inc., and Union Metal Manufacturing Co.

(More pictures on next page)

STACKED to full height permitted by low overhead, bagged sand is piled on corrugated steel pallets for fork truck handling.



ROTATING shelf unit fits into corner and provides visibility and accessibility for bulk stock, parts. Dividers speed selections.

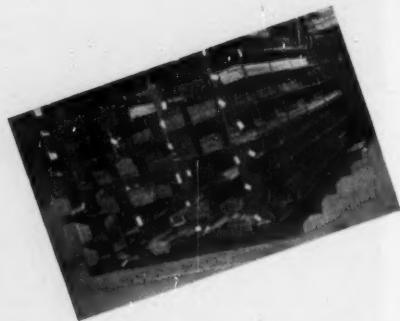


High Capacity Storage . . . Continued

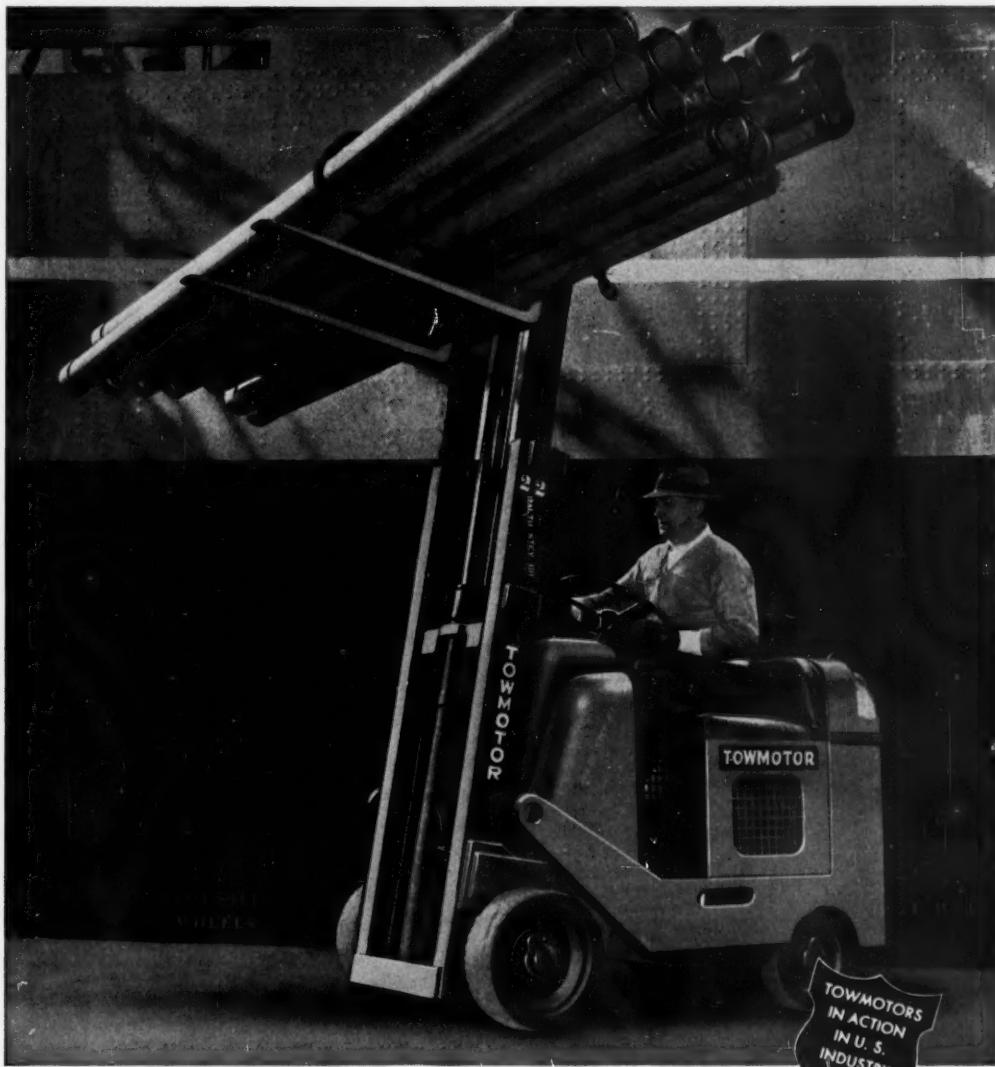


HOPPER ended boxes stack compactly to store great quantities of small components and parts. Stacking starts on the floor, if desired, and can be extended to maximum heights, around obstructions, pipes or fixtures that may be encountered.

MOBILE STORAGE is provided by container-racks such as this, which can be rolled individually or in trains to supply production areas. Height of unit can be governed, as required, by clearances in warehousing space.



COMPACT AND ACCESSIBLE stacking of bar, rod and tube stock—as well as any long parts—can be achieved with sectional racks having adjustable arms. Racks can be obtained in double-face models for use out on floors or in single-face units for use against a wall.



Anything from pipe to pretzels, Baltimore Stevedoring finds Towmotor more than equal to the task.

The Big Cinch...

Little inch or big one, any job's a lead pipe cinch with Towmotor speeding materials handling up to double and more for you . . . and the boss. Results like that are no pipe dream, thanks to TownoTorque, the new automatic transmission that helps you crowd extra hours into every working day. And Power Steering that's easy no matter how long your operators drive. Or the new Cushioned Power Diesels that handle like sissies and perform like the frugal brutes they are. Plus many other Towmotor features that help you get so much more done . . . so much more easily. Send today for booklet describing TownoTorque and Power Steering. TOWMOTOR CORPORATION, Div. 806, 1226 E. 152nd Street, Cleveland 10, Ohio.

TOWMOTOR

THE ONE-MAN-GANG

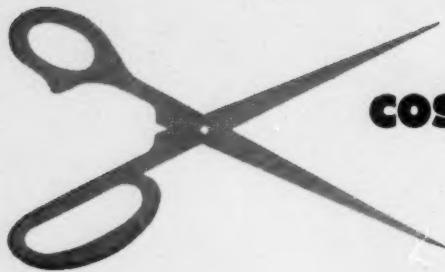
**FORK LIFT TRUCKS
AND TRACTORS**

SINCE 1919

TOWMOTOR ENGINEERED FOR QUALITY PERFORMANCE

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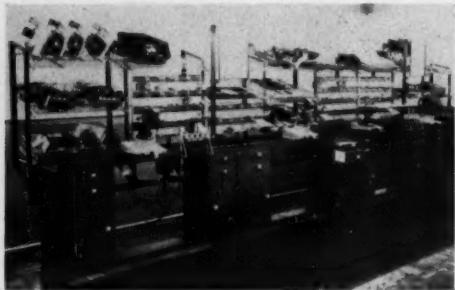
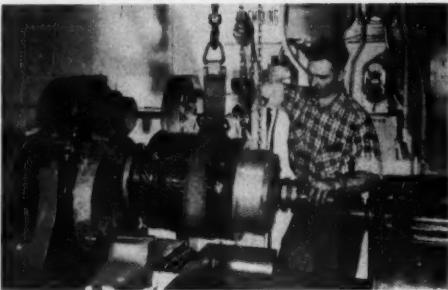
FLOW • JUNE, 1953



COST CUTTING IDEAS

SLING HANDLING SPEEDS REPAIRS . . .

Motors are moved from truck to lathe to truck in woven wire slings at Herr Electric Co., Baltimore repair shop. The sling has been found useful for all types of motors but especially for models without eyebolts on the frame. Using a noose hitch, the sling grips tightly around the circumference of the load. Positioning in a lathe, as shown, can be done by one man; formerly two or three were required. The woven wire construction provides a surface that does not become slippery from grease used on the part handled.



TAILOR-MADE WORK STATIONS . . .

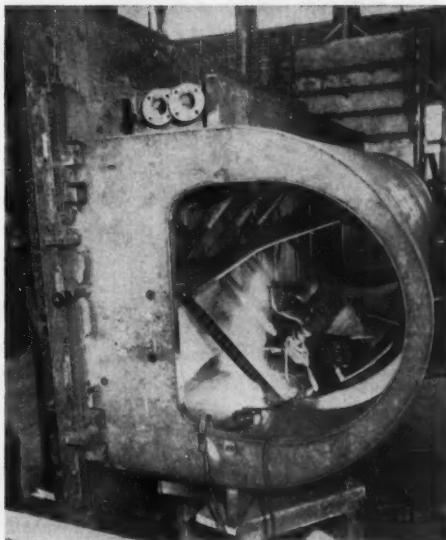
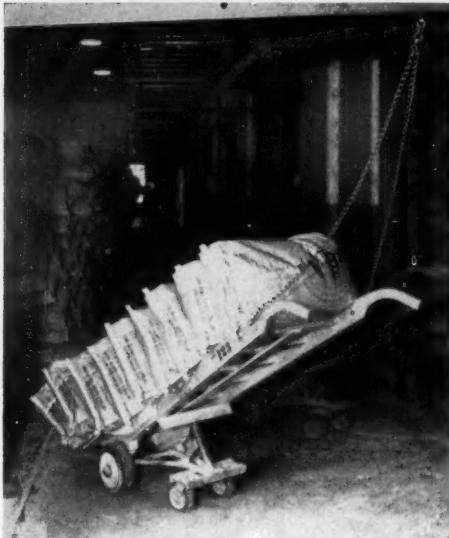
Interchangeable wire baskets and plastic cups can be arranged in practically any combination for work stations originally developed for Hughes Aircraft Company Division of Hughes Tool Co. Large wire baskets store parts and sub-assemblies, and plastic cups on both sides of a revolving frame hold screws, nuts and smaller parts. Because containers can be loaded from the rear, operators are supplied without interruption of work. Variations in the set-up are obtained by bolting any required number of baskets and cups to the adjustable frame.

HANDLING UNIT LUMBER LOADS . .

Unloading and storing a car load of lumber in an 8 hour day is a one man job at a plant which specifies that unit loads be supplied. Freight cars carry about 11 unit loads of some 400 pieces, without pallets. A fork truck picks up loads in the cars and places them on castered trailers, which are hauled 500 feet to the storage area, where another fork truck unloads and stacks the boards. Later, as lumber is needed, it is delivered by unit load to the production area. The old manual method required 6 men, working at least 9 hours, to get the wood into storage.

POSITIONING TO CUT WELDING TIME . . .

If you have a large welding job, this idea may be just what you need. At the Westinghouse Sunnyvale, Calif., plant, all welding operations on large turbine condensers were originally performed with the units in one position. Now, each condenser is positioned first on one side, then on the other to eliminate all vertical and overhand welding. The condenser, plus the strongback, is positioned by an overhead crane with auxiliary hook to hold it while cribbing and blocking are set. Welding looks better, the operator feels better, and time saved is considerable—500 welding hours per unit.

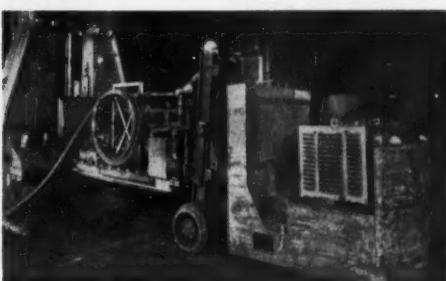


CONVEYORIZING HAND-TRUCKS . . .

A large Mid-Western mill is handling over 300 tons of bagged material per day with an unusual system. By adding two swivel caster wheels, otherwise standard two-wheel hand trucks have been adapted for use with overhead power conveyors—which run from loading docks to warehouse space, and from packers to warehouse and shipping. Costs have been cut because multiple manual handling has been eliminated and a smooth, confusion-free flow of both raw and finished materials established by the arrangement.

DIE KEY DRIVING WITH FORK TRUCK ASSIST . . .

An air compressor unit carried on the forks of a 12,000 lb. lift truck makes it easy for one man to drive die keys home. In the forge shop of an auto manufacturer, a compressor, mounted on a platform, is brought up to the forging hammer, raised to the right level. Then the truck operator gets off the truck to pull a lever that propels the key-driving ram. The system eliminates the risk of accidents while doing a fast job.





**THE
HOWE
Mechanoprint
THE
MODERN
WEIGHT
RECORDER**

**Accurate-Fast-
Simply and Ruggedly Designed-
Versatile**

The new Howe Mechanoprint, companion instrument to the Howe Teleprint, is a greatly simplified and modern Mechanical Weight Recorder built-in as an integral part of the Howe Tape-Drive Dial head. It is fast, ruggedly designed and has a minimum of working parts to assure the user of trouble-free operation and long life.

The Howe Mechanoprint is furnished with a variety of adaptations for standard straight ticket, for ticket and tape, for odd-sized tickets and with identifier, manual or electrical time and date stamp, consecutive numbering device, etc.

The Howe Mechanoprint working in conjunction with the Howe Tape-Drive Dial Scale, is the very ultimate in a rugged, accurate, dependable Mechanical Weight Recorder and is a worthy companion of the Howe Teleprint (Electronic Remote Weight Recorder).

Ask for descriptive Form AM-A1.

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 HOWE CONDENSED SCALE CAT. No. 11

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86

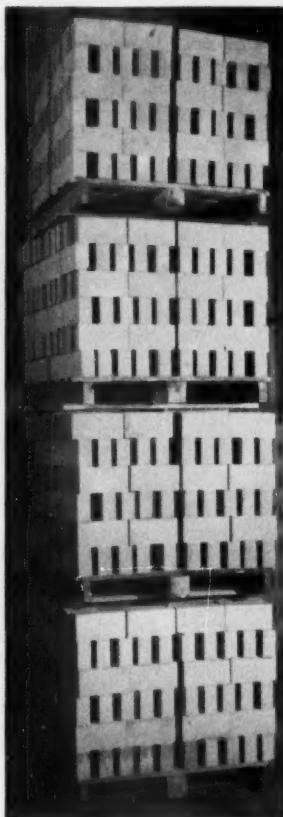
HOW HIGH...

Would You Stack Fragile Brick?

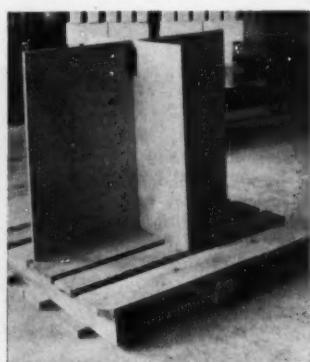
INSULATING brick made by Hill Brick Co., E. St. Louis, is extremely fragile, and ordinarily, one would not consider high-stacking as a means of storage. Yet, this company has been able to stack pallet loads of the brick four-high, to completely utilize storage space.

The bricks are made of an Aluminum ore by-product, residue of the manufacture of fluorides from fluorspar, and has perlite added to give added insulation and light weight. They are pressed out at the rate of 10,000 to 15,000 per day, and curing is accomplished by a five to six day drying period.

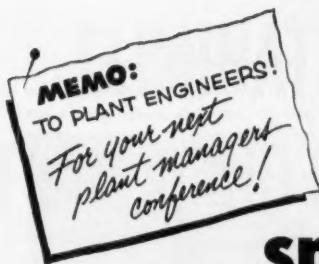
During the drying period, bricks are stacked on commercially available, patented four-sectional collapsible wood pallets designed to eliminate excess compression on bottom bricks. A pallet consists of standard platform base and two vertical plywood dividers rising high enough to clear a six-high stack of bricks. Each pallet can hold 280 bricks arranged in a loose stack for proper circulation of air. The method has proven extremely flexible for Hill Brick Co.



FOUR PALLETS HIGH, these fragile insulating bricks are in no danger of damage from compression. Secret is in the collapsible pallets on which bricks are stacked.

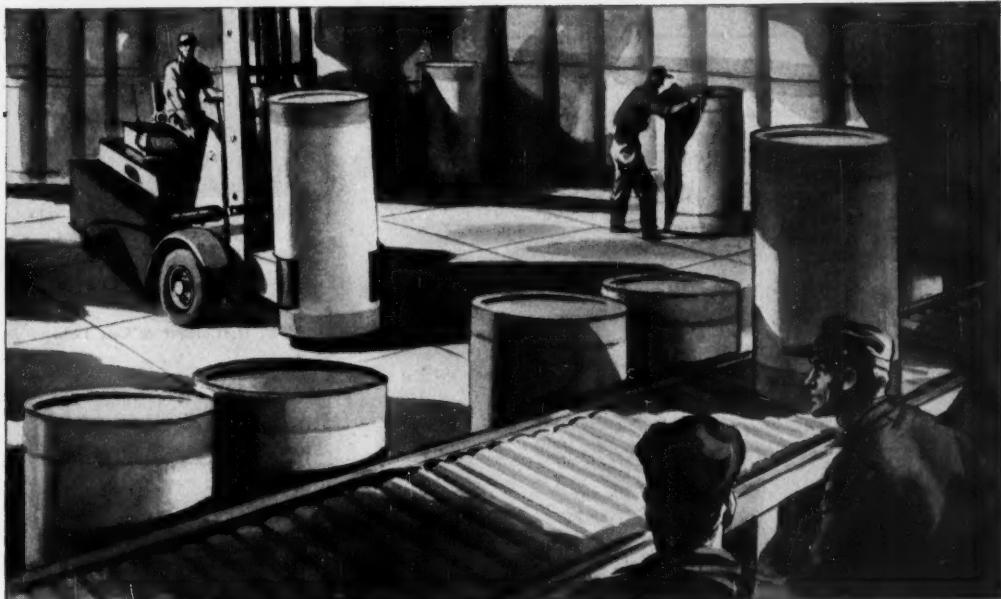


VERTICAL PLYWOOD DIVIDERS fit into slots in the base of the pallet. Height of the dividers is slightly more than 6-high stack of bricks.



RADIO

speeds material flow!



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For complete information on G-E industrial radio communications equipment, call our local office today or write: General Electric Company, Section 3263, Electronics Park, Syracuse, New York.

*Communications Advisory Service

G-E 2-Way Radio Gets Raw Material Where You Want It...When You Want It!

Both expensive equipment and personnel stand idle when you use an outdated communications system to find raw material and get it into production. One sure way to prevent shut-downs on production lines...to get the most out of men and equipment every workday...is to equip your plant with G-E Industrial 2-Way Radio!

Superior G-E communications equipment—designed for industrial applications—gives outstanding performance...long-life...low-cost maintenance in every installation. Take advantage of G-E experience when you evaluate a communications system for your plant. You'll get built-in quality that assures satisfaction.

GENERAL ELECTRIC

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Show Addenda

In its May issue, FLOW presented for its readers a preview of equipment which was to be shown at the 5th National Material Handling Exposition in Philadelphia. A number of exhibitors were not able to provide information and photos in time for that issue. Therefore, a brief report of each of their exhibits is included on these pages.

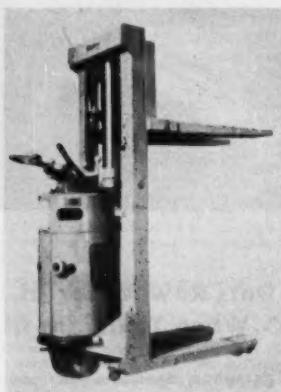
Flexible Hose Lines

Aeroquip flexible hose lines with detachable re-usable fittings were featured. Also self-sealing couplings which provide quick connection and disconnection of fluid-carrying lines.

Aeroquip Products Inc.

Industrial Trucks

The "American Matting" line of lift trucks, powered pallet and skid



type trucks, "suspended fork" type truck and a high stacking straddle type lift truck.

American Matting Corp.

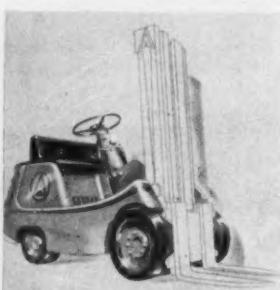
Two-way Radio

Industrial applications of two-way mobile radio, industrial television, electronic metal detectors and other electronic equipment was demonstrated.

RCA Victor Division of the Radio Corp. of Amer.

Electric Transmission

A gas-powered industrial truck



with electric transmission. Name of the unit is Dynamotive.

Automatic Transportation Co.

Anniversary Celebration

To celebrate its 30th anniversary, this company exhibited a complete line of counterboy tape dispensing machines as well as the Big Inch machines for pressure sensitive tapes.

Better Packages, Inc.

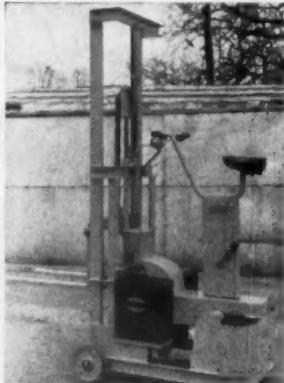
Life-Size Freight Car Loader

The DF Loader, a box car load-locking, load-securing device installed in a full-size section of a box car was exhibited. A demonstration illustrated difference in load securing abilities between Evans equipped car and non-equipped car.

Evans Products Co.

Pedal-operated Truck

A fork lift truck designed for use in instances where goods are

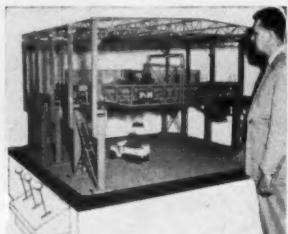


transported over distances not very great, and where volume is not extremely large. Locomotive is by pedal-power and lifting is by battery power.

R. H. Corbett & Co., Ltd.

Crane Operator Test

Visitors to the booth were given the opportunity to test their abilities as crane operators on a mini-



ature operating model of the P&H Magnetroque Overhead Crane which was complete with controls. The hoist division of the company focused attention on a Zip-Lift Electric Hoist with wire rope control.

Harnischfeger Corp.

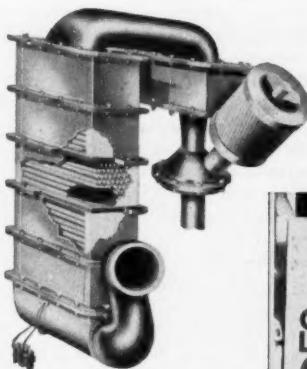
Handling Carnival

"A carnival of profitable handling ideas" was the theme of the Rapistan exhibit. Conveying equipment models and cost-cutting ideas were shown.

Rapids Standard Co., Inc.

(Continued on page 152)

ELIMINATE CARBON MONOXIDE, FUMES AND ODORS FROM LIFT TRUCKS



OCM CATALYTIC EXHAUST

(A Houdry Catalyst Development)

Reduces CO to a safe level

and any other types of
gasoline-powered equipment



The OCM CATALYTIC EXHAUST replaces the original muffler without changing clearances . . . and is easy to install.

★ Kills all fumes and odors from exhaust gases of internal combustion engines using white gasoline.

★ Assures absolute safety for employees, and increases efficiency.

★ Makes possible the operation of gasoline-powered equipment anywhere, thus reducing costs.

★ Simple, sturdy construction, rupture-proof under explosion.

★ Gives 2000-2500 trouble-free hours of operation, after which catalyst is quickly replaceable . . . and at low cost.

★ Tested and listed by Underwriters Laboratories, Inc., and used in many of the nation's leading industrial plants.

Write for detailed information and specifications to

OXY-CATALYST, INC.

WAYNE, PA.



NOTE. This company also makes catalysts for air-pollution control, power and energy, and waste heat recovery for industrial operations ranging from metal coating to oil refining.
Write for details.

Circle No. 113 on Reader Service Card for more information

One Man Can Run 72 Cars With . . .

Centralized Elevator Control

IMPROVEMENT of handling facilities at the Army's N. Y. Port of Embarkation, in Brooklyn, includes one of the largest elevator modernization programs ever undertaken. A feature of the project, now more than half way completed, is central-office control of elevators by a single dispatcher. At present he can run 72 cars, which require no other operators.

In one building, elevators are arranged in banks of seven; in the other they are in banks of ten. The dispatcher has seven or ten elevator control panels in front of him, as well as a telephone switchboard beside him. Each panel contains a control button and indicator light for each floor. The dispatcher knows just where each car is and what it is doing. If, for example, the numeral "4" lights on the panel controlling Elevator Number 11, he knows that No. 11 is at the fourth floor. If a call is received via the switchboard for an elevator at the sixth floor, the dispatcher checks the indicator light on the top left of the control panel to make sure the car doors are closed. He then presses the No. 6 button and gives it a quarter turn to send the car to the sixth floor. When the car is loaded, the sixth floor foreman or checker presses a button outside the elevator to close the doors. The light

on the panel tells the dispatcher the doors are closed, and he sends the car to whatever floor is required.

This method of operation, however, is the exception. Because of the huge tonnages handled, most loading and unloading operations require several hours and are repetitive. Usually, the superintendent fills out a form requesting that one or more elevators be assigned to a job. He specifies the floors involved and the time the handling is to start. This form goes to the elevator dispatcher who assigns the cars in his banks by number. No further instructions or telephone calls are needed. The dispatcher merely watches the panels involved and keeps the elevators running between the floors specified until the job is finished.

Although elevators are normally controlled without attendants in each car, the system is flexible. By turning a key at the lower right corner of the panel, the dispatcher can transfer control from the panel to the elevator, which has a set of control buttons for use if attendant operation is required.

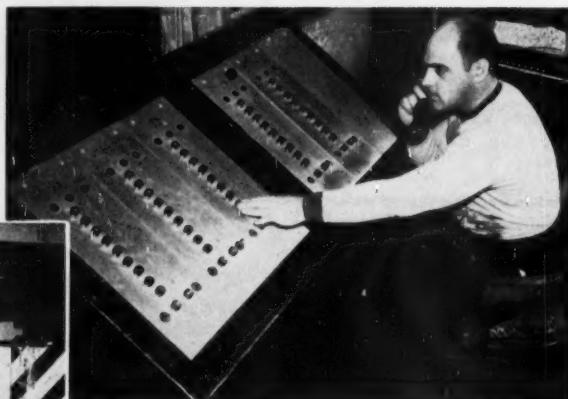
Simultaneous Loading

Economies through this system are considerable because, formerly, in addition to the operator required for each car, 19 men were needed in reserve. Also, when there is no work for an elevator, even for a few minutes, its motor-generator set is shut off automatically. When a call is registered on the panel by the dispatcher, the electrical driving equipment automatically starts again. The dispatcher can shut off the power to any elevator in his bank by turning a key.

Each elevator in the two main warehouse buildings is equipped with power operated, bi-parting doors at each end of the car. Each can be and often is loaded or unloaded by fork trucks simultaneously from either end. At least one door is always free, and it is frequently possible to load a car without entering it.

Photos and data courtesy Otis Elevator Company.

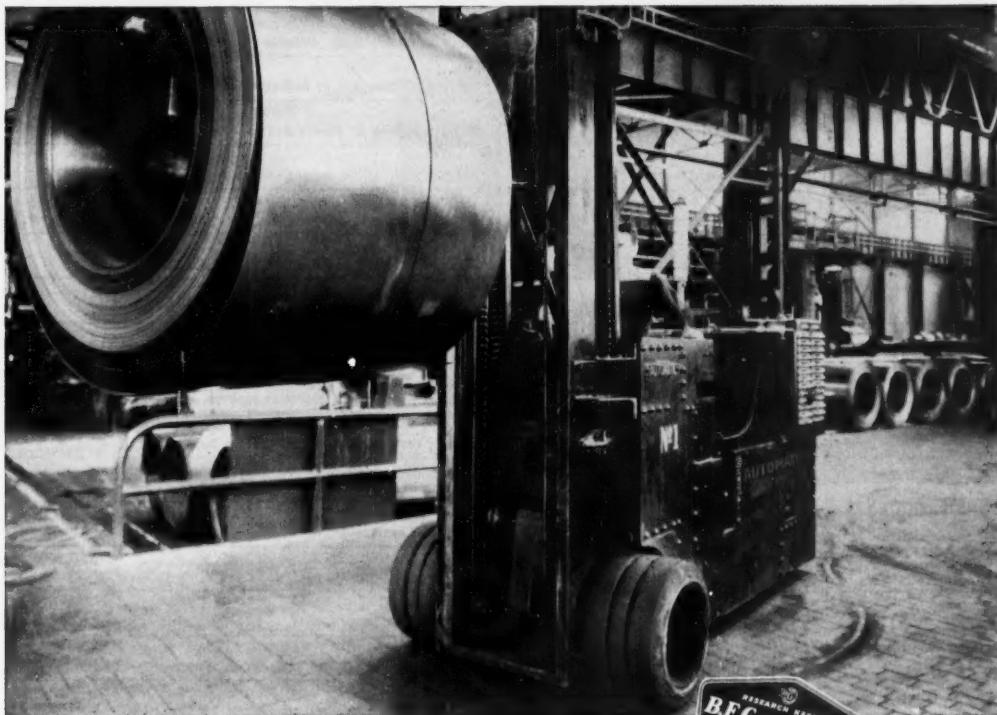
DISPATCHER receives phone call to send elevator No. 13 from seventh to first floor.



FORK TRUCK loads modernized elevator. Doors at both ends permit simultaneous operations.

B.F. Goodrich

**TRUEWAY
TIRE AND WHEEL
ANALYSIS solves your industrial
tire problems, saves you as much as 50%**



WHAT'S your industrial tire problem? Too much power-consumption or rolling resistance? Not enough traction? Cushioning or flotation? Or is it cutting, tread chipping or oil damage? No matter what it is, there's an industrial tire designed to solve it, one that may give you up to twice as much service as any other tire.

To help you specify this tire, B. F. Goodrich has developed the Tire and Wheel Analysis Plan. Without obligation, a trained BFG man will study your materials handling operations. He'll recommend the right type tires for you to use—solid, semi-pneumatic or pneumatic. He'll tell you what tread design is best—smooth, directional, non-directional—and if a special tread compound should be used.

Follow the TW Analysis man's advice and you can save as much as 50% on industrial tire costs. And his maintenance tips can cut your bills up to 20%. His advice is impartial, for B. F. Goodrich makes, and BFG retailers sell, a complete line of industrial tires.

To find out more about this free B. F. Goodrich Tire and Wheel Analysis Plan, mail the coupon or call your BFG retailer. A special TW Analysis Plan is available for manufacturers of industrial handling equipment.

Specify B. F. Goodrich tires when ordering new equipment

Circle No. 101 on Reader Service Card for more information

FLOW • JUNE, 1953



The B. F. Goodrich Company
Department TW-94, Akron 18, Ohio

Please send me:

Additional information on your new Tire and Wheel Analysis Plan
 A free copy of your "Industrial Tire Guidebook"

Name _____

Company _____

Street _____

City _____ Zone _____ State _____

WIRE ROPE

CAUSES OF DAMAGE IN SERVICE AND MEASURES FOR THEIR CORRECTION

DAMAGE	PROBABLE CAUSES	CORRECTIONS (In Addition to Replacing Rope)
EXTERNAL WEAR	Sheaves wrong size	Replace with correct size new sheaves.
	Sheaves worn	Replace with new sheaves.
	Insufficient Lubrication	Clean and relubricate. Provide regular lubrication.
	Dragging or rubbing on obstructions	Remove obstructions or deflect rope with sheaves or rollers.
	Sheave bearing frozen	Replace bearing or sheave and bearing.
	Sheave weight excessive	Replace with lighter weight sheave.
	Fleet angle excessive	Move sheave farther from drum or replace with a fleetng sheave.
	Sheave guard rubbing	Repair or replace guard.
INTERNAL WEAR	Sheaves mis-aligned	Align sheaves.
	Abrasive penetrating strands	Clean and lubricate regularly.
	Sheave diameter too small	Replace with correct diameter sheaves.
	Reverse bending	Change reeving to eliminate reverse bending.
SNAGGING OR CUTTING	Sheave flange broken	Replace defective sheave.
	Drum groove damaged	Repair or replace drum.
	Overwinding on drum	Use longer drum, less rope, or install drum follower.
	Excessive wear	See causes of wear, above.
STRANDS BROKEN	Overloads, shock loads	Use larger rope, smaller loads, gradual application of load.
	Reverse bending	Change reeving to eliminate reverse bending.
	Fatigue at connections	Cut back ends and replace fittings.
	Rope coming off sheaves	Use sheave guards, correct the alignment of sheaves, reduce fleet angle.
DEFORMATION	Sheave or Drum diam. too small	Replace with correct diameters.
	Rope coming off sheaves	Use sheave guards, correct the alignment of sheaves, reduce fleet angle.
	Kinks	Unwind rope from spool and reeve without twisting or looping.
CORROSION	Insufficient lubrication	Provide regular lubrication.
	Acid or moist conditions	Shield rope and lubricate often.
	Acid or caustic fumes or fluids	Shield rope from fumes and fluids. Clean and lubricate often.
HEMP CENTER DESTROYED	Excessive heat	Shield from heat or replace with metallic center rope.

Do You Have Safety Problems in Your Business?

*Here's the
Answer!*

If you employ people, you **have** safety problems. And they can be mighty expensive ones. Injuries and illnesses cost you money two ways: 1) work-sustained disabilities are compensated for, according to your state law, out of your pocket; 2) absence from the job costs even more in lost production, training replacements.

Safety can cut your costs—no matter what business you're in, regardless how many people you employ. And here's your guide to dollar savings through accident-prevention. Its 10 separate sections cover every phase of industrial safety and health, from Aluminum dust hazards to Zirconium's toxic properties.



The Handbook is an authentic reference for fundamental facts on all phases of industrial safety. Indexed for quick reference. The Handbook gives you an immediate answer to any hazard elimination. It gives you fast non-technical information on hundreds of safety and health threats—and tells how to prevent them.

The Handbook is a compendium of all phases of safety education, written in non-technical language. Valuable source material for seasoned safety men, ideal background for men new to safety work.

This Handbook, published by Industrial Book Co., has been written and prepared by its affiliate, Occupational Hazards, Inc.



It will tell you what the dangers are and how to eliminate them from your operations.

The Industrial Safety & Health Handbook is bound in a heavy-duty binder—and it has to be. It's made for continual, rough use: you'll soon find it the most valuable book on your desk. Its nearly 300 pages are indexed and color-tabbed for fast reference. You can get an immediate answer to any safety or health problem that arises. If you have no safety engineer, you'll need this book more than ever.

INDUSTRIAL BOOK CO.

1240-F Ontario St.
Cleveland 13, Ohio

Gentlemen:

Please send me _____ copies of the new Industrial Safety & Health Handbook at the price of \$25 per copy.

(Check or money order enclosed _____ Bill me _____)

Name _____

Title _____

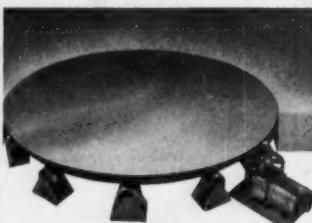
Company _____

Street _____

City _____ Zone _____ State _____

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Flexible, Adaptable **CHASE Turntable** ... Turns Products, Trucks, Cars



Sizes and Capacities to 10 tons

CHASE Turntables are power driven, can be equipped with steel rails, grooved or top surfaced to your specifications. Diameters up to 8'. Indexing and locking device available. Requires a pit only 15" deep. Turns autos in show rooms, conveyor line products, rolling stock. Has many applications. Write for specification sheets.

CHASE FOUNDRY & MFG. CO.

Industrial Car and Truck Builders
For Over 50 Years.

2600 PARSONS AVENUE
COLUMBUS 7, OHIO

SALES FIELD

(Continued from page 14)

Charles F. Van Sweringen has added two new lines of packaging equipment to his sales agency which covers the New York and New Jersey area. **General Machinery Corp.** has assigned him its automatic fin seal flat pack wrapper, and the **Holm Automatic Scale & Mfg. Co.** has extended him the sales franchise for its net weighing and filling machine. Van Sweringen opened his sales agency last November in Hackensack, N. J., and already handles a well diversified line of packaging machinery.

and founder of the firm, is assisted by V. W. Olson, vice president; W. O. Hanson, secretary-treasurer, and F. E. Blackmarr, sales manager. The announcement was made by **A. H. Loux**, Flexible's distributor sales manager.

Tracto Lift Co. has announced the appointment of the **Eastern Industrial Sales Co.**, New Rochelle, N. Y., as its distributor for metropolitan New York and the New England area. **Matthew W. Potts**, well-known material handling authority, is head of the distributor firm.

A. W. Hooper has been named exclusive representative for **Lewis-Shepard** in the state of Alabama. Headquarters for his sales operations will be at 5245 South Fifth Ave. in Birmingham.

REDUCE HANDLING of Tools, Parts and Materials

Because Stackbins are portable containers — not fixtures — tools, parts and materials can be carried to departments, from machine to machine, or held in stockrooms without being transferred from one container to another. Stored in Stackracks, any Stackbin is instantly accessible when its contents are needed — without disturbing any other bin. **Stackbins** — individual hopper-fronted stacking bins, slide like drawers in Stackracks — individual units which lock together to form racks of any size, shape or capacity.



STACKBINS IN STACKRACKS

Manufactured and sold
in Canada exclusively by
Wickware-Stackbin, Ltd., Ottawa
Write Stackbin Corp.,
1133 Main St., Pawtucket, R. I.

STACKBIN

"Stacked and



SYSTEM

Still Accessible"

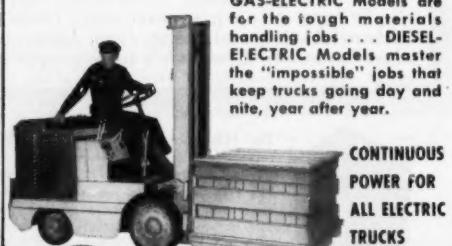
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94

NOW . . . 2 TYPES OF READY-POWER DRIVE

GAS-ELECTRIC



DIESEL-ELECTRIC



CONTINUOUS
POWER FOR
ALL ELECTRIC
TRUCKS

The READY-POWER Co.

3838 Grand River Ave., Detroit 8, Michigan
Manufacturers of Gas and Diesel Engine-Driven Generators and Air Compressing Units; Gas and Diesel-Electric Power Units for Industrial Trucks

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JUNE, 1953 • FLOW

POST OFFICE COSTS

(Continued from page 63)

officials are being re-examined by the new Department appointees. And before the proposed handling method can be used at top effectiveness, it will be necessary to:

1. Use a different type of highway truck for the inter-city transfer moves. Trucks now being used do not allow optimum loading.
2. Reserve more storage cars which are free of obstructions for parcel post handling so as to provide maximum storage room in the cars used.

Experts involved in the tests also believe it will be necessary to concentrate present modern equipment used for parcel post handling into a more closely-knit operation, working on a single railroad if possible, to avoid the many inter-railroad transfers now being made.

But before the system can produce the savings tests have shown it can, the Department will have to schedule at least 40-60 percent of its parcel post handlings for container shipments.

What Would the System Do for Industry?

Privately, many railroaders say their handling labor costs could be cut by as much as 40 percent, and the crews are now assigned to handling parcel post reassigned to other work.

Private industries adopting the unit-load idea for rail and truck shipments have already made huge savings, of course. Although the average manufacturer doesn't have the same tremendous stake in shipping costs as the Post Office, his potential savings are dramatic.

On the shipping dock alone, the cost of handling is drastically reduced through mechanized handling of unit-loaded shipments. The Navy Materials Handling Laboratory has estimated that unitized handling cuts dock handling costs as much as 66 percent.

As a logical extension of storage and shipping-dock handlings, the unit-load shipping method could mean tremendous savings.

*Mr. Stevenson is Manager of Transportation Sales for The Baker-Rauland Co.

Which fork lift truck would you choose?



Diesel or Gasoline ...

BUDA BUILDS THEM BOTH!

Diesel or gasoline? . . . that's the question when you purchase fork lift trucks. Buda builds both . . . and thus is an expert to help with your decision.

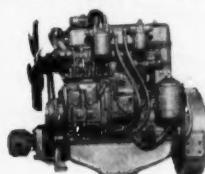
BUDA DIESEL POWER

Buda Diesel-powered fork lift trucks are your answer where ignition spark or toxic exhaust may present a problem. Buda Diesels average over 4,000 hours before overhaul. And they're tops when it comes to fuel economy. Diesel fuel burns completely through, giving you power-plus for every ounce.

BUDA GASOLINE POWER

Buda gasoline engines are the huskiest in the field. They're built just like heavy duty industrial engines. You'll see this in the extra ruggedness of their crankshafts, connecting rods—in fact, it's that way from head to pan. They give added hours of dependable performance—reduce down-time to a new low. Whether it's Buda Diesel or Buda Gasoline Power you'll find it the finest in lift trucks.

BUDA DIESEL OR GASOLINE . . . CUT CARGO HANDLING COSTS IN HALF!
Feather-touch controls harness the brawn of Buda Fork Lift Trucks as they glide in and out of tight spots, lifting and placing ponderous loads with ease and dexterity. Torque conversion multiplies clutch life six times; rugged, heavy-duty engines outlast other engines thousands of hours. Special designs, exclusive features make Buda the name to remember when you want the best in fork lift trucks.



Buda-built heavy-duty Gasoline and Diesel engines offer you more operating economy and functional features than any other engines. Remember, only Buda builds its own engines.

- ✓ Load and unload 50% faster!
- ✓ Cut men-hours and overtime in half!
- ✓ Complete clutch change in 30 minutes!
- ✓ Full accessibility to engine, clutch and hydraulic system—the "freedom" mechanics asked for!
- ✓ More than 50 exclusive features found on no other trucks but Buda-built trucks!
- ✓ Call your Buda Material Handling Distributor today and get all the facts!

Write for Bulletin and complete data.
The Buda Company, Harvey, Illinois

The Line with ALL 3
for Diversified Handling

BUDA



Platform
Trucks



Towing
Tractors



Fork Lift
Trucks

BB-108

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See how much more WHITING offers!

- ✓ **Increased Plant Capacity** — Whiting's multi-industry experience can help you get all the benefits of overhead handling. Whiting Trambeam makes building investment cost less . . . gives you more room for production, storage, assembly and shipping!
- ✓ **Lower Costs** — Whiting Trambeams are "tailor-made" for you from standard components. Use it alone or use it with other handling equipment.
- ✓ **Flexibility** — Crane or monorail—or both! Whether you want fast point-to-point transport or complete area coverage, Whiting Trambeam provides the important advantage of flexibility!

Other Whiting materials handling equipment:
Overhead Cranes • The Trackmobile • Electric Chain Hoists

WHITING CORPORATION
15659 Lorain Avenue, Harvey, Illinois

Send for this Folder!

See how Trambeam speeds work in six departments of the Euclid, Ohio plant of Reliance Electric and Engineering Company!

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INDUSTRIAL WHEELS

(Continued from page 77)

conditions that attack metal wheels—such as corrosion, oxidation and effects of certain chemicals. Its resistance to heat and wear makes it a tough tread for use in foundries, bakeries and drying ovens. The tread is hard and tough, but is not brittle.

5. Hard Rubber Tread, which usually consists of an extremely hard compound which is tough but has very little resistance, has high load-carrying capacity. It is resistant to acids, alkalies, alcohol, vegetable oils and most mineral oils. Also, it has long wearing characteristics.

Wheel and Tire Selection

The proper method for selecting the right wheel and tire is as follows:

First, determine the load to be carried on each tire; second, determine the overall diameter of the tire that can be used, as the larger the diameter, the easier the roll; third, if the load per tire is greater than the recommended load capacity of the size being considered, it is necessary to go to a larger size or, if limited by platform height, it is advisable to use a dual application.

Having determined the type wheel that is needed, the next step is to consult the wheel specifications. To find the correct wheel on a specification chart, match the rim size with the bore and hub length. If all are suitable, then the right wheel will be listed under the wheel number.

Tire Markings

Tires are marked in two different ways, for example:

4.00-8 and 4 x 1 1/2

The use of the decimal marking (4.00-8) identifies the tire as a pneumatic. The use of fraction marking (4 x 1 1/2) identifies the tire as a solid.

Another variation in tire marking is the addition of a third dimension, for example:

16 x 4.00-8 and 27 1/2 x 3 1/2 x 23 1/2
The first marking (16 x 400-8) is a pneumatic, and the addition of

(More on page 98)



YOU'LL PROFIT FROM THE BEST of this cost-cutting experience



The rough, tough schools of competition and experience are great teachers.

That's why Rapistan now releases a vast library of fast-reading, illustrated data on how other companies have changed materials handling problems into profits. Many of them are in your own field.

These field reports are from every corner of the country. Each report gives you a tested and successful handling improvement idea that could save you thousands of dollars yearly. You'll find many suggestions on how to use your present equipment in new ways.

Our surveys show that of those reports distributed, 75% have been kept by management men for future action. At least 20% of these reports have inspired immediate improvements in handling methods.

Rapistan invites you to share its long cost-cutting experience by indicating which of these factual reports will be helpful to you. Check the list on this page or just write today on your letterhead.

Rapistan conveying equipment is right for each job... single units, lines or engineered systems for specific needs. Rapistan equipment is better 3 ways in flexibility, quality and exceptional value.

YOURS FOR THE ASKING!

Complete Rapistan Field Reports on how materials handling problems similar to yours have been successfully solved by and for leaders in your own field. Each report details the problem involved, its solution, and results obtained. Below is a partial listing of available reports. No charge. No obligation.

Please check your business classification:

Manufacturing Agricultural Wholesale Retail

Check reports below which will be of greatest benefit to you:

<input type="checkbox"/> Aircraft Parts	<input type="checkbox"/> Heating Equipment
<input type="checkbox"/> Auto Supplies	<input type="checkbox"/> Household Appliances
<input type="checkbox"/> Beverages	<input type="checkbox"/> Laundry Services
<input type="checkbox"/> Building Supplies	<input type="checkbox"/> Leather Products
<input type="checkbox"/> Canneries	<input type="checkbox"/> Machine Parts
<input type="checkbox"/> Chemicals	<input type="checkbox"/> Magazines, Newspapers
<input type="checkbox"/> Cosmetics	<input type="checkbox"/> Meal Packing
<input type="checkbox"/> Dairy Products	<input type="checkbox"/> Metal Stamping
<input type="checkbox"/> Fabricated Metals	<input type="checkbox"/> Paint Products
<input type="checkbox"/> Floor Coverings	<input type="checkbox"/> Paper and Publishing
<input type="checkbox"/> Food Products	<input type="checkbox"/> Pharmaceuticals
<input type="checkbox"/> Freight Terminals	<input type="checkbox"/> Power Tools
<input type="checkbox"/> Fruits, Vegetables	<input type="checkbox"/> Sugar Refining
<input type="checkbox"/> Furniture	<input type="checkbox"/> Tobacco Products
<input type="checkbox"/> Grain and Feeds	<input type="checkbox"/> Warehousing
<input type="checkbox"/> Grain Milling	<input type="checkbox"/> Waste Materials
<input type="checkbox"/> Grocery Store	<input type="checkbox"/> Wood Products

There are many other Rapistan Field Reports. If your business is not listed, please indicate your special needs below:

THE RAPIDS-STANDARD COMPANY, INC.
50 Rapistan Building, Grand Rapids 2, Michigan

NAME _____
COMPANY NAME _____
STREET ADDRESS _____
CITY _____ ZONE _____ STATE _____

Rapistan
BETTER CONVEYING EQUIPMENT
Representatives in Principal Cities •

CONVEYORS • INDUSTRIAL CASTERS • WHEEL-EZY® TRUCKS

Circle No. 159 on Reader Service Card for more information

FLOW • JUNE, 1953



DRUM STORAGE...

Illustration shows Manzel Crane handling the new lightweight collapsible container of U. S. Rubber Company.

Manzel FLOOR CRANE

**Solves MANY
Handling Problems**

• One man guiding this Manzel Hydraulic Floor Crane easily transfers the heaviest loads from place to place. Raising or lowering with a few easy strokes, steering accurately through tight aisle spaces, riding safely over any surface, the Manzel Floor Crane is the answer to a variety of problems. Let Manzel engineer one to *your* requirements. For information write.



286 Babcock Street
Buffalo 10, New York

Circle No. 23 on Reader Service Card for more information

INDUSTRIAL WHEELS

Continued

the third dimension identifies it as a wide base standard. The second ($27\frac{1}{2} \times 3\frac{1}{2} \times 23\frac{1}{2}$) is a solid, and the addition of the third dimension identifies it as a pressed-on rubber type solid.

Pneumatic Tire Markings

In pneumatic tires, the tire and rim standard marking (4.00-8) is read as follows:

4.00 signifies 4-inch overall width of the tire;
8 signifies 8-inch bead seat diameter (inside diameter).

The wide base standard marking (16 x 4.00-8) is read:

16 signifies 16-inch overall outside diameter of the tire;
4.00 signifies 4-inch overall width of the tire;
8 signifies 8-inch bead seat diameter.

Solid Tire Markings

In solid tires, the marking (4 x $1\frac{1}{2}$) is read:

4 signifies 4-inch overall outside diameter;
 $1\frac{1}{2}$ signifies $1\frac{1}{2}$ -inch rim width.

The pressed-on rubber type solid marking ($27\frac{1}{2} \times 3\frac{1}{2} \times 23\frac{1}{2}$) is read:

$27\frac{1}{2}$ signifies a $27\frac{1}{2}$ -inch overall outside diameter;
 $3\frac{1}{2}$ signifies a $3\frac{1}{2}$ -inch tire width;
 $23\frac{1}{2}$ signifies a $23\frac{1}{2}$ -inch inside diameter of the tire.

Having selected the proper wheel, check the tire specifications for the proper tire to match size and load specifications. If the load is greater than the capacity of the tire, a dual application would be advisable. In dealing with specific problems, it is recommended that a material handling equipment or parts manufacturer be consulted. In this way, you will avail yourself of the latest developments and the application of special equipment for specific uses.

For its help in preparing this article, FLOW thanks the Market & Product Research Committee of the Caster & Floor Truck Manufacturers' Association.

CASTING SUPPORT



MATERIAL HANDLING



LOADING AND UNLOADING



MACHINE REPAIR



FLOOR LINE MARKING

(Continued from page 65)

layout that any plant having in excess of 35,000 square feet of building space is not 100 percent organized without good floor lining. When a plant is properly lined out, management will get nearly 100 percent cooperation from employees in the proper use of lines. This is more true when some discipline is held over employees. See what is accomplished in public parking lots! When they are lined,



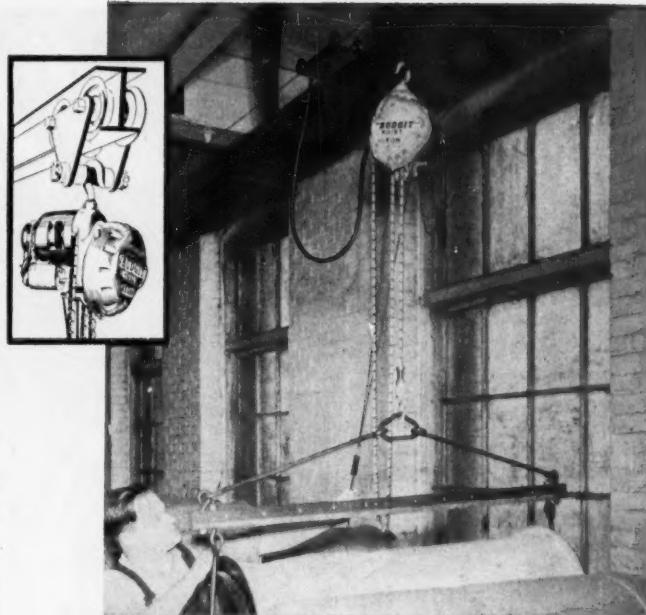
WARNING pedestrians as well as drivers, plastic markers taper to quarter-inch high centers.

efficient use of space is very high without supervision or discipline. It is known that random parking without lines wastes 30 percent of the parking space.

To be effective, lines must be kept clear and clean. When a crowded plant has allowed lines to become obliterated and wishes to reline, it usually finds stock has to be moved in some areas to clear aisles, storage areas, etc. It has been established that, for a number of types of plants, it costs \$5.00 an hour to move stock. This cost, plus the inefficiency of working without good lines, runs into real money.

Consider what could happen in a brand new plant recently surveyed for efficiency of handling. Out of 1,250,000 square feet of floor space, 25 percent of the total has been provided for aisles. Since aisles average 10 feet in width, total length of them is approxi-

(More on next page)



Replaces "TUSSLE" with "HUSTLE"

Budgit® ELECTRIC HOIST

Use the 'Budgit' Hoist and electric power takes over the lifting. No muscle-work, except to pull lightly on the control cord with one hand and guide the load with the other. Workers stay fit—no more injuries or time out due to the hazards of manual lifting.

Hoisting is fast. The 1/4-ton 'Budgit' lifts the full load one foot in less than two seconds. As production for defense and civilian needs goes up, costs go down.

The 'Budgit' is a complete, portable hoisting unit that uses very little current. It's safe to operate — rugged construction protects man, load and hoist. You'll find it ideal for load handling at machines, in assembly, and at inspection stations. No extras to buy, no installation costs to pay. Just hang up, plug in, and the 'Budgit' Electric Hoist is ready to serve you economically for years to come. Capacities: 250 to 4,000 lbs. AC and DC models. Priced from \$129 up. For full details, call your "Shaw-Box" Distributor or write for a copy of Bulletin 391.



A 'BUDGIT' I-BEAM TROLLEY makes any hoist more useful. Tough steel construction. Ball bearings in wheels. Adjustable to fit several sizes of I-Beams. Capacities: 500 to 4,000 lbs. Priced from \$15.50. Bulletin 390 mailed on request.

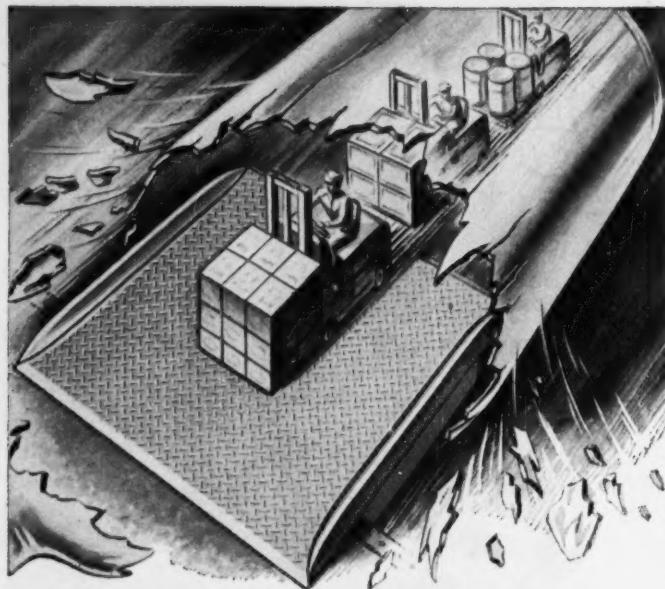
Budgit® ELECTRIC HOISTS

MANNING, MAXWELL & MOORE, INC.
MUSKEGON, MICHIGAN

Builders of "Shaw-Box" and "Load Lifter" Cranes, "Budgit" and "Load Lifter" Hoists and other lifting specialties. Makers of "Ashcroft" Gauges, "Hancock" Valves, "Consolidated" Safety and Relief Valves, "American" Industrial Instruments, and Aircraft Products.



Circle No. 85 on Reader Service Card for more information



Smash Loading Bottlenecks!

Increase the loading capacity of your existing facilities... *without major capital expenditure!* Do it by equipping your docks with Magliner magnesium dock boards. Custom-engineered to facilitate traffic flow, these light-weight, easy-to-handle units permit smooth, fast transit between dock and freight carrier. Eliminate loading jams and carrier tie-ups! Break costly bottlenecks in shipping and receiving with *magnesium-light, magnesium-strong* Magliner dock boards! Write today for descriptive bulletin DB-204.

MagLiner
MAGNESIUM
DOCK BOARDS



NEW! DAMAGE-PROOF SAFETY CURBS!

New Magline safety curb prevents wheel impact—major cause of all dock board damage! Get longer service life... better service performance... with Magliner magnesium dock boards!

REINFORCED CURB ENDS!

...of cast magnesium! Dowelled-in — welded construction! Double strength where it is vital! Flared design permits easy wide-angle turns and prevents tire damage. Roomy, comfortable hand grips for easy carrying.

WRITE FOR DESCRIPTIVE BULLETIN DB-204

Standard Dock Boards Also Available—Write for Information

MAGLINE INC. • P. O. BOX 346 • PINCONNING, MICHIGAN

Circle No. 106 on Reader Service Card for more information

FLOOR LINE MARKING

Continued

mately 31,000 feet, or nearly 6 miles. It is through these arteries that the material and employees flow, and traffic is usually heavy. Distinct safety and storage lines for material certainly should be used to protect and get maximum use from 25 percent of a firm's area.

Self-Adhering Plastic Tapes

Floor striping with plastic film tapes can be handled by two men, or by one using an inexpensive, semi-automatic applicator. This has a pressure wheel which applies



PLASTIC FILM tape conforms to contours of wood floors in warehouse. Lines establish both aisles & storage boundary.

tape to all types of floor surfaces, including those with crevices and depressions. Once in place the tape grips immediately; maximum adhesion can be achieved by applying additional pressure on the tape. One firm reports running a hand truck with wide-rim wheels over the entire length of the stripe to press it down more firmly.

To help identify specific floor areas inside plants, the tape is made in a variety of colors—red, green, orange, blue, yellow, white, black, and brown. Although it is available in many widths, most floor marking jobs are being done with the 2-, 3-, or 4-inch tapes. In a typical installation, a firm uses the 4-inch yellow to designate smoking areas, the 4-inch red to designate hazardous areas. Another firm uses the 2-inch white to mark trucking lanes and the 3-inch red to outline safety areas.

Bausch & Lomb Optical Co., Rochester, N. Y., has found that different colored floor stripes can be used to educate as well as safeguard their employees. For the

past 30 months the tape has been in use for marking trucking lanes and safety area stripes on production area floors. During that time it has also been instrumental in broadening the employees' smoking privileges within the plant—colored stripes are used to designate "smoking permitted" and "no smoking" areas.

In an effort to acquaint all of its employees with the meaning of the different colored tape lines, Bausch & Lomb's safety department recently launched an intensive inter-plant educational program. Through the use of letters, bulletins, posters, pay envelope notices, and personal supervisory contact, each of the firm's workers were told that—

White lines designate trucking lanes.

Red lines designate danger and "no smoking" areas.

Yellow lines mean safe and "smoking permitted" areas.

Due to the strict limitations placed on the smoking privilege by the New York State Department of Labor, the program's chief drive was made toward preserving that privilege.

One method—to avoid misinterpretation of the lines—was to switch from a single to a double line to designate particular areas. Two parallel red lines, for example, caution workers not to smoke on either side of the lines; a combination of one red and one yellow line indicates that smoking is permitted on the yellow side but prohibited on the red side; while two yellow lines denote that smoking is permitted on either side.

Paint Applying Equipment

In general, there are two types of commercially available paint striping machines. One sprays a line of the desired width, the other feeds paint by gravity from a reservoir to the striping orifice. Adaptations of both can be made to suit individual plant requirements. For example, Western Electric Company has a problem in marking lines at the edges of pallets. Loads on these pallets extended 5 inches beyond the edge, and a powered, spray-type striping machine was developed to put a line under the load, next to the pallet. Furthermore, it was required that

(More on next page)

New 1-Ton Aluminum Packet Hand Chain Hoist Weighs Only 32 Pounds



High tensile aluminum alloy parts make it 21 lb. lighter than 1-ton all-steel Packet

This saving in weight is achieved by the use of high tensile aluminum alloy housing, hand chain wheel, hand chain and center frame. Though much lighter in weight, the aluminum Packet retains the drop-forged, heat treated steel hooks; the electrically welded, oval link, heat treated, steel load chain; and the mounting of rotating parts on prelubricated, shielded ball bearings of the all-steel hoist.

To obtain more information on these lightweight, spur geared hoists that are easily carried from place to place and that lift capacity loads smoothly and safely, look in your classified telephone directory under "Hoists" for your nearest Harrington distributor. Or write for Bulletin P-5.

HARRINGTON PEERLESS HOISTS

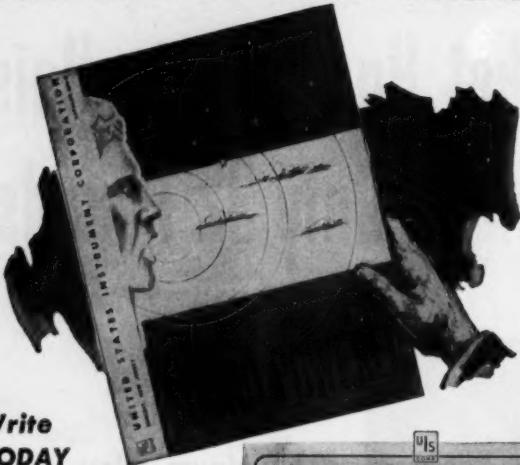
THE HARRINGTON COMPANY, 1638 W. Callowhill St., Phila. 30, Pa. • Since 1876

Circle No. 144 on Reader Service Card for more information

Circle No. 147 on Reader Service Card for more information

**modernize your communications ...
without batteries**

U. S. I. SOUND POWERED TELEPHONES



**Write
TODAY
FOR THIS CATALOG**

*Write Dept. W
for Catalog*



Neff & Fry Silo System pays foundry big dividends

This system was described in *THE IRON AGE*. We abstract as follows:

"Installation enables one man to unload a 50-ton car of sand in an hour. Previously, sand was shovelled by hand. Took six men a full day to unload a gondola. The 16' x 50' silo holds a 6-week supply. Sand is kept dry. Total installation cost will be repaid every three years."

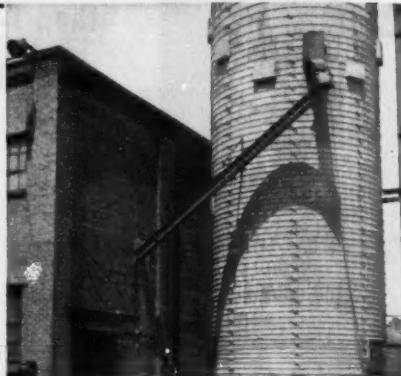
Similar savings are being made in handling all kinds of flowable bulk materials through Neff & Fry Silos with suitable conveying machinery. We can cite hundreds of cases.

It will pay you to have us study your requirements. Anyway, ask for our folder, "Bins With the Strength of Pillars."

THE NEFF & FRY CO. • 110 Elm St. • Camden, Ohio

NEFF & FRY ► **SUPER-CONCRETE STAVE
STORAGE BINS**

Circle No. 111 on Reader Service Card for more information

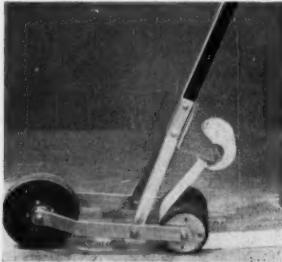


FLOOR LINE MARKING

Continued

the equipment be perfectly safe for inside use. That meant a special, explosion-proof gasoline tank, shielded ignition, special muffler for reducing carbon monoxide content of exhaust fumes, and other safety measures.

Companies producing items in which the odor of paint would affect the product, as in a packing



ONE MAN, working single handed, can do a complete lane marking job using this semi-automatic tape applicator.

house or bulk food warehouse, cannot tolerate the spray operation while the plant is going and hence demand a gravity feed machine. Furniture manufacturing plants and warehouses, which also cannot have free spray floating around, can also use gravity equipment.

Floor marking machines come in a wide variety of types to suit almost any need and budget. They're economical in use, too, requiring a minimum amount of paint to give maximum coverage on the stripe.

Whatever means you consider for marking your floors, keep in mind that aisles, production and storage areas are as much operating facilities as any other material handling device in the plant. To get maximum efficiency from them, give them the care and attention they deserve.

FLOW credits the following sources for pictures and for assistance in preparing this article: A. C. Horn Company, Inc.; Minnesota Mining & Manufacturing Company; National Safety Council; H. C. Sweet Company; and Universal Mfg. and Sales Co.

MATERIALS-HANDLING NEWS

★ Panel Discussions by Bassick, World's Largest Manufacturer of Casters and Floor Protection Equipment ★

Two New Bassick Casters To Save You Money

New low-cost 5" and 6" sizes for loads up to 1400 lbs
feature Double Ball-Bearing Swiveling

Big news this month from Bassick, world's largest maker of casters, is the development of two new high-efficiency casters for shop trucks and mobile equipment used in factories, stores, warehouses, hotels, hospitals, laundries, etc. They join the famous "68" series (and are matched by identical additions to the "08" series of rigid casters) popular everywhere for fast, easy swiveling and built-to-last construction.

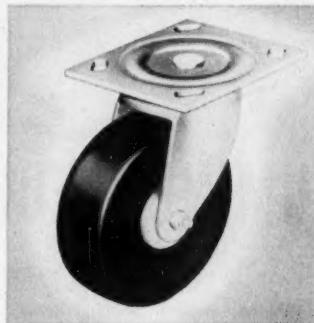


Six-inch Wheel

No. H6686-2-1 — with soft rubber tread for loads up to 250 lbs.

No. H6689-2-1 — with Atlasite solid composition tread for loads up to 350 lbs.

Both types have 1½-in. tread width roller bearing wheels with thread guards.



Five-inch Wheel

No. H5686-2-1 with soft rubber tread for loads up to 200 lbs.

No. H5689-2-1 with Atlasite solid composition tread for loads up to 300 lbs.

Both types have 1½-in. tread width roller bearing wheels with thread guards.

Three Big Reasons Why They Save You Money

LOWER INITIAL COST . . .

Actually priced lower than most less efficient 5" and 6" casters having only single ball race bearings.

EASIER SWIVELING . . . The Bassick "Diamond-Arrow" double ball-bearing swivel construction provides the highest degree of swiveling efficiency.

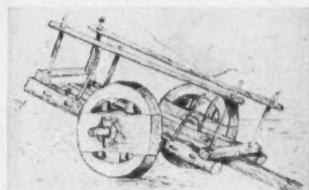
LONGER LIFE . . .

Raceways are fully case-hardened for extra durability and longer service life.

GET THE FACTS ABOUT THESE NEW MONEY-SAVING CASTERS

Write to us or ask your industrial distributor salesman for the full story on these two new Bassick casters. Let us show you how they can save you money three ways: lower initial cost . . . easier operation . . . longer life. We're ready to show you samples of the new casters and what they can do to speed up movement of needed materials through your shop or plant.

Man's First Invention?



Some experts say the wheel is man's original invention. Nature, they claim, gave him a hand or a hint for other basic ideas like fire, boats and airplanes. But the wheel emerged full-blown as the brilliant idea of some unsung Stone Age wool-gatherer.

The primitive cart shown above is equipped with massive wheels hand-hewn from a tree trunk. The wheels show considerable ingenuity of design. A rude form of hub has been introduced, consisting of a separate circular piece inset into solid wood. Not a scrap of iron was used in the construction of the entire cart.

Materials-handling has come a long way since this cart, and wheels continue to be one of the most important products in modern civilization. They are the basis of practically all easy movement. Today, Bassick industrial wheels are made in a large range of materials, sizes and capacities for use as wheels or in Bassick casters. If you want to make sure your production keeps rolling, check with your Bassick industrial distributor. He'll be glad to recommend the best Bassick caster or wheel for the job. Or write directly to Bassick at the address below.



THE BASSICK
COMPANY

Bridgeport 2, Conn.

In Canada:
Belleville, Ont.



MAKING MORE KINDS OF CASTERS...MAKING CASTERS DO MORE

Give
your
Product a
SALES
PUSH

with

REYNOLDS ALUMINUM FOIL PACKAGING

A whole sale is the sum of its parts...and the part your public sees first is *the packaging*. That's true whether your public is a garage mechanic, toolroom clerk or Joe Consumer. He is impressed by your company's efficiency, convinced of your product's quality, if that product reaches him in perfect condition...*looking its best*.

That's one reason why industry is following the spectacular sales examples of Reynolds Aluminum Foil packaging in the food, candy, gum and tobacco fields. *Nothing sells like foil!*

But there are other important reasons, too. Often foil packaging effects big savings over previous methods of product protection...as in the instance cited here. *Nothing protects like foil!*

Reynolds, world's largest producers of aluminum foil, offers a Packaging Service complete in every phase. Whether your products need simple wrapping in plain or embossed foil, the development of special foil materials, or elaborate package and art design using Reynolds advanced color-printing techniques...our Packaging Man has the answers. Call him...at the nearest Reynolds Sales Office. Or write to Reynolds Metals Company, General Sales Office, Louisville 1, Kentucky.



Quality looks the part, in GMC parts. Illustration shows how GMC Truck & Coach uses embossed foil to wrap bearings, piston rings, intake valves, connecting rods, etc. Besides the extra sales appeal, foil wrapping enables GMC to give up heavy greases for a light grease that does not have to be removed. Keeps oil in place, keeps out dirt, delivers the product at inspection-line perfection.

REYNOLDS ALUMINUM

SEE "MISTER PEEPERS," starring Wally Cox, Sundays, NBC-TV • HEAR "Fibber McGee and Molly," Tuesdays, NBC Radio Network

Circle No. 134 on Reader Service Card for more information

PACKAGING and SHIPPING SECTION

TABLE OF CONTENTS

What's New In Packaging & Shipping Equipment	109
Here's How to Package Fragile Products	111
Packaging for Preservation	118
New Ideas In Packaging	122

DEVOTED TO THE MECHANICS OF PACKAGING AND
PREPARATION FOR SHIPPING . . . MATERIAL HANDLING FUNCTIONS

An Easy Index to This Month's Advertisers

Are you looking for a particular type of packaging and shipping equipment? Listed below are advertisers according to the type of product they are advertising in this issue. We have attempted to make your job a little easier by listing them as often as possible. To use this index, find the type

of product in which you are interested . . . turn to the advertisers listed under that product . . . circle the correct numbers on the reader service card, mail it in, and you'll get complete information in a jiffy.

BULKHEADING

Evans Products Co.	108
Pittsburgh Steel Products Co.	2

CONTAINERS

Central Fibre Products Co., Inc.	126
Champion Co.	123
Gaylord Container Corp.	127
General Box Co.	110

CUSHIONING AND BARRIER MATERIALS

Central Fibre Products Co., Inc.	126
Kimberly-Clark Corp.	125
Reynolds Metals Co.	104
Sisalkraft Co.	132

GLUES, TAPE AND TAPE DISPENSING EQUIPMENT

Better Packages, Inc.	130
Derby Sealers, Inc.	126

MARKING AND STENCILING EQUIPMENT

Wm. A. Force & Co.	132
Adolph Gottscho Co.	133
Marsh Stencil Machine Co.	130
Weber Addressing Machine Co.	128

STRAPPING, STAPLING & STITCHING EQUIPMENT

Acme Steel Co.	33, 117
Brainard Steel Div., Sharon Steel Corp.	107
Gerrard Steel Strapping Div.	129
International Staple & Machine Co.	121
Signode Steel Strapping Co.	131
Union Special Machine Co.	124



"Packaged" bridges are rolled on conveyor to loading platform, then quickly hoisted aboard flatcars. Photos at Smith Pipe and Steel Company, Phoenix, Arizona.

PACKAGING
A BRIDGE

Brainard Strapping Service speeds handling of defense materials

These prefabricated Bailey Bridges, used by the armed forces to cross rivers, culverts, etc., are now securely packaged into unit loads with the Brainard Strapping System. This method permits fast mechanized handling of the product from manufacture to shipment.

Equally important, the shipments are secured against loss, damage or pilferage until opened for use in the field.

Brainard can help you streamline your materials han-

dling, and meet armed forces shipping specifications. Have an analysis of your handling and shipping operations now—Brainard salesmen are qualified to *recommend and demonstrate* the most efficient system for you.

For complete information call the nearest Brainard Steel sales office, or write Brainard Steel Division, Sharon Steel Corp., Dept. K-6, Griswold Street, Warren Ohio. In Canada: Brainard Steel Canadian Division, Toronto.



STEEL STRAPPING

Circle No. 142 on Reader Service Card for more information



WONDER BAR

...THAT HANDLES WITH CARE

You're looking at a major innovation in modern railroading—one of the basic cross bars of the Evans DF Loader which can be handled by one man. This advanced equipment, installed in standard box cars, eliminates costly blocking, yet locks in lading so firmly that it reduces damage to the vanishing point.

Results? Shippers save millions by eliminating old-fashioned Dunnage and the labor needed to install it. Railroads save more millions in damage payments, and in reduced damage to rolling stock. Further, cars equipped with DF Loaders earn more; they are loaded heavier and turned around faster.

The DF Loader—the Damage Free, Dunnage Free Loader—secures loads against shifting . . . supports loads to prevent crushing . . . separates loads into solid sections. The latest achievement of Evans loading engineering, it is available at no extra cost in

cars supplied by 30 Class I railroads. To learn how this modern equipment can earn extra profits for you, consult *Evans Products Company, Railroad Loading & Equipment Division, Dept. AF-6, Plymouth, Michigan.*



Booklet Available on Request

Packed with factual information, it shows how railroads can earn extra revenue and shippers can cut shipping costs with time-tested DF equipment. Be sure to send for your copy today. No obligation.

LOCKS LADING INTO BOX CARS
... **EVANS** ... **DF LOADER** ...
TO ELIMINATE DAMAGE & DUNNAGE



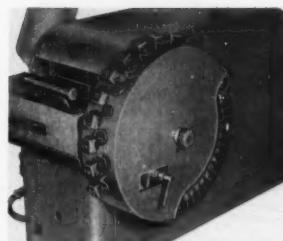
Circle No. 143 on Reader Service Card for more information

WHAT'S NEW... in Packaging and Shipping Equipment

Push Button Electric Tape Dispenser

An all electric, push button tape dispensing machine, the Electric Clip-A-Tape is now being manufactured by the Ideal Stencil Machine Co. The keyboard buttons can be set to give any tape length from 3' to 100'. Features cited include; constant tape speed, accurate wetting, takes all tape widths from one in. to four in. Quick, simple operation is said to make the machine excellent for use by two operators. It is 12 in. high, 12 in. wide and 20 in. long.

Circle No. 203 on Reader Service Card for more information



Reinforced Wrapper Features "No Stain", No Offset

Thilco-Tuf is the trade name adopted for a recently developed laminated protective wrapper which is said to completely eliminate danger of stain and offset. The manufacturer, Thilmany Pulp & Paper Co. also reports that when the wrapper was subjected to 200°F. temperatures for 16 hrs., there was no heat bleeding. It is available in widths up to 10 ft. wide without splice or seam, and in four standard grades from extra heavy duty to normal.

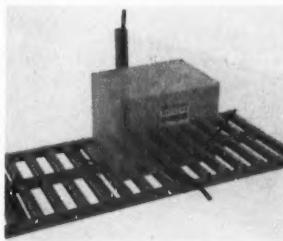
Circle No. 204 on Reader Service Card for more information



Strapping Aid

Metzgar Company's "Banding Helper" Conveyor features easy passage of strapping through under-pass and up a vertical deflector channel, and a channeled midrib to receive strapping from a roll under the conveyor. It is available for any standard conveyor width or can be made with length and width to suit a shipper's maximum container size. Illustration shows how the unit functions as part of standard conveyor line.

Circle No. 205 on Reader Service Card for more information

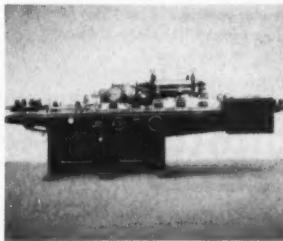


Labeling Machine Features Flexibility

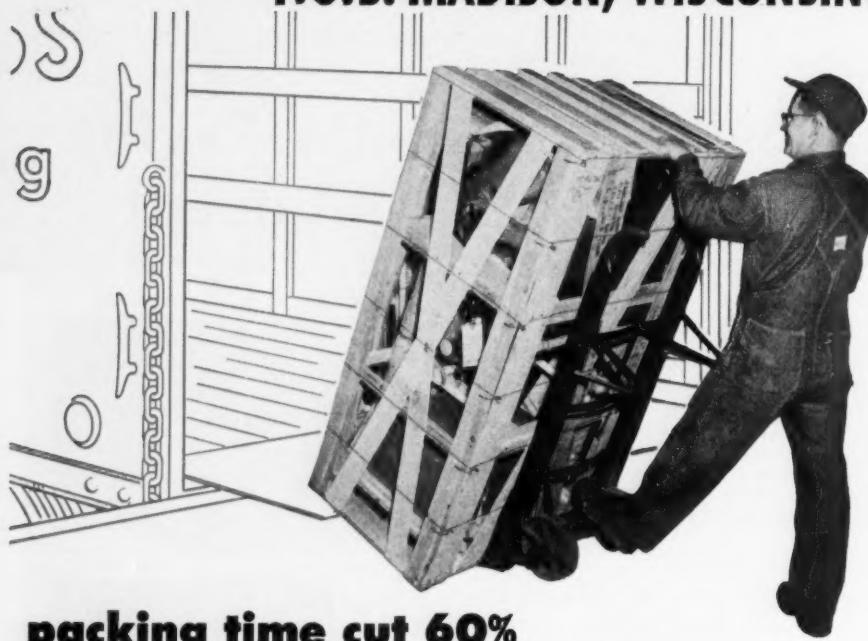
Gallon jugs and four-ounce bottles can be labeled with equal ease by the Thrifty Automatic Labeling Machine of Package Machinery Co. It is a continuous-motion straight-line machine with a speed of up to 120 containers a minute, and can be fed by hand as well as automatically. Containers to which labels are being applied may be dry, moist, hot or cold, without affecting sealing. Almost any tape of rectangular, round or fancy cut label may be used.

Circle No. 206 on Reader Service Card for more information

(Continued on page 132)



F.O.B. MADISON, WISCONSIN...



packing time cut 60%

materials cost cut 17%

shipping weight cut 9%

With General Engineered Containers



Find out how other manufacturers are cutting container costs. Write for your free copy of "The General Box."

Wherever these giant cylindrical pressure sterilizers are going, it costs less to ship them. General container engineering cut material cost \$2.00, saved 70 minutes packing time and reduced shipping weight 42 lbs. on this hard-to-pack item... and this is only 1 of 12 cost-cutting containers we have helped to create for Ohio Chemical and Surgical Equipment Co. (a Division of Air Reduction Company, Inc.) since 1949.

Whatever your packaging problem, military or civilian, General Box Company's two fine packaging laboratories and trained packaging experts stand ready to help you solve it. Find out how you can cut costs. Write for complete details.

General

★ ★ ★ ★

BOX COMPANY

1857 Miner St.,
Des Plaines, Ill.

Factories: Cincinnati, Denville, N. J., Detroit, East St. Louis, Kansas City, Louisville, Milwaukee, Prescott, Ark., Sheboygan, Winchendon, Mass., General Box Company of Mississippi, Meridian, Miss., Continental Box Company, Inc., Houston

Generalift Pallet Boxes
Wirebound Crates and Boxes

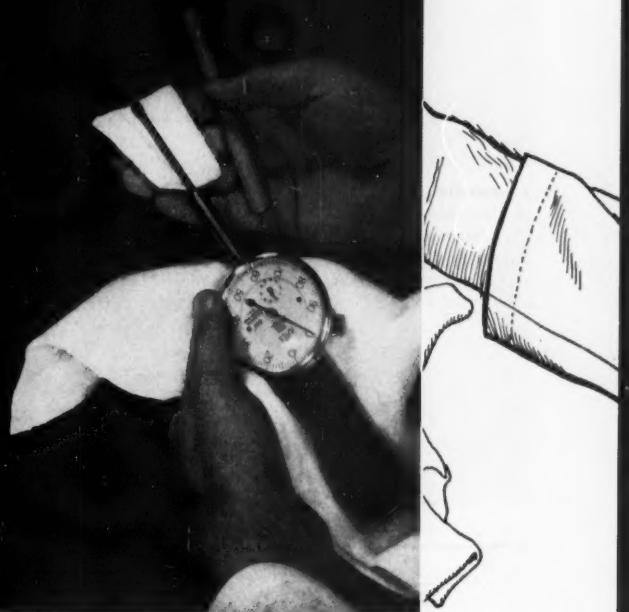
Cleated Corrugated and Watkins-Type Boxes
Corrugated Fiber Boxes

All-Bound Boxes
Generalift Beverage Cases

ENGINEERED SHIPPING CONTAINERS FOR EVERY SHIPPING NEED

HERE'S HOW
TO PACKAGE

fragile
PRODUCTS



CLIP AND SAVE

HOW much protection does any product get from "Fragile—Handle With Care" labels? Printed in eye-stopping red, they can be valuable aids to safe shipping... if they are used on packages which have been carefully prepared to withstand occasional rough handling. The same labels can be worth little more than the paper on which they are printed if they are used to compensate for inadequate packaging.

From the time a product is finished until the time it gets to the user, it is handled again and again; sometimes as gently as one would like, and other times not so gently. Any fragile product should be packaged for protection against the not-so-gentle handling which it is almost certain to get before it reaches its final stopping point.

How Rough Can it Get?

In designing the packaging for any product, it is a good idea to try first, to determine how much rough handling it will encounter and the magnitude of the roughness. Obviously, if enough cushioning material is used, a generally good job of product protection will result... but at what cost? Careful study ahead of time will tell the complete story of

No. 2 in a series on "Preparing Products for Shipment"



Continued

that cost, and perhaps indicate ways to cut it drastically.

Impact recorders have been developed to make it possible for a shipper to know what to expect for his product during transportation and handling. A sensitively actuated stylus in one of these machines responds to even the slightest shocks to indicate their magnitude on calibrated graph paper. These styli record in vertical, lateral and longitudinal directions. The recorders can be furnished with clock mechanisms to make available a timed record.

Let us suppose that an impact recorder with clock mechanism has been attached to the side of a freight car carrying light bulbs. From the moment that car is sealed to the time it is opened for unloading, an ac-

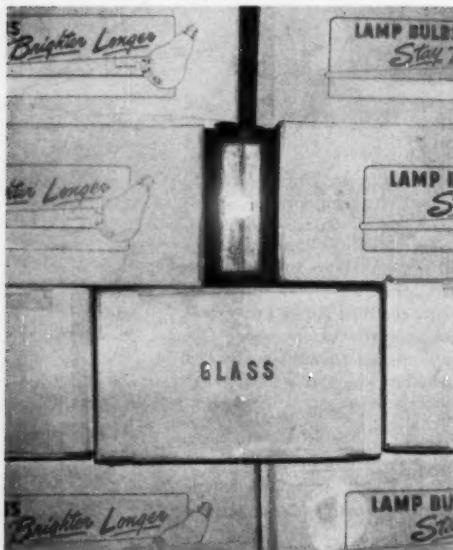
curate, timed indication of every bump and jar is recorded on paper.

Where even more specific information is required, an impact recorder can be placed within a dummy package having the same weight and moments of inertia or center of gravity as the packaged product or, one of the devices can be attached to an actual product concealed in the container. The advantage of this method is that a record is supplied to tell graphically when a shipment was in motion, when it was standing still, (as on a siding) and when any change took place in the position of the package. The latter point is of most importance in "this end up" merchandise. An impact recorder also gives a play-by-play description from the time the product is packaged until the package is opened.

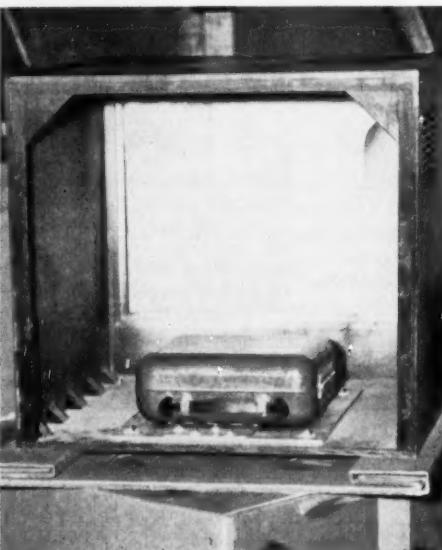
Planning the Package Cushioning

With the information secured from impact recorders, one can then proceed to the actual design of the package. The selection of a correct type of cushioning

How Rough Can it Get?



IN A FREIGHT CAR . . . Impact detecting and recording instrument placed between boxes tells of shocks on containers themselves. Another method has device mounted on car wall to tell of impacts to car.

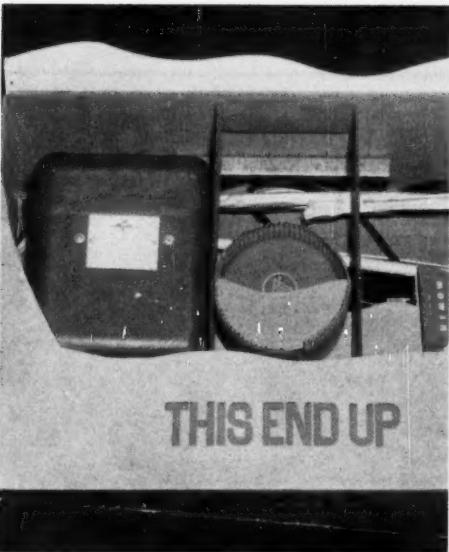


IN A PRODUCT . . . Refrigerators, stoves, television sets (above), etc., can have instrument placed inside to give actual conditions to be expected for internal parts during handling and shipping.

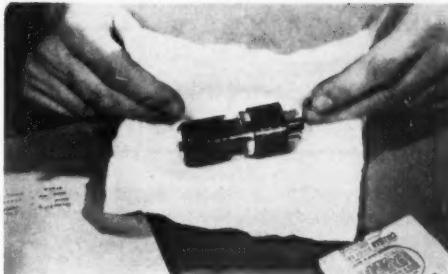
and its proper use is of major importance whenever fragile products are concerned. Generally, there are four points which one should consider to help in the selection of cushioning material: 1. Load-deflection characteristics or spring rate; 2. Ability to retain height and spring rate after repeated shocks and after exposure to changes in temperature and moisture; 3. Ease of application; 4. Freedom from abrasiveness. In the case of foodstuffs and perishables, a fifth consideration might be the likelihood of the material to impart a foreign taste to the packaged product or to otherwise affect its condition.

Properties of Cushioning Materials

Cushioning materials prevent mechanical damage during shipment by serving as energy absorbing media between the product and its container. Action by the cushioning material accomplishes this end, providing absorption, distribution, or localization of the shock to minimize effect on the fragile item enclosed. These three functions can be performed with efficiency by any number of types of cushioning including excelsior, shredded paper, rubberized fiber cellulose fiber and cellulose wadding. Selection should be made on the basis of certain properties which control their



IN A CARTON . . . Recorder can be packed in with products like this power mower. Impact recording devices can be equipped with clock to tell when shocks occur, or may only record when shocks have occurred.



MILITARY PACKAGING . . . Electronic tube is wrapped in neutral cushioning material with proper unit of dessicant included. Then it is inserted in pouch made of MIL-B-131A Class D Barrier Material.



Continued

performance and, of course, the degree to which any certain product requires the presence of these properties.

Compression

This is of utmost importance since the primary function of cushioning is to absorb energy created as the result of an impact shock striking a container. The shock energy is absorbed as the cushioning material is compressed. A soft or "low-compression" material will compress several inches under a given load whereas a stiff, or high compression material may only deflect



GRINDING WHEELS . . .



a fraction of an inch. Selection of the correct compression should consider such factors as weight, strength and surface area of the product and the size of the container as it limits the space for cushioning.

Compression Set

A cushioning material should return as closely as possible to its original thickness after being compressed under a standard load and time-of-release condition. The loss of thickness of a cushion under such load is termed "compression set" and is expressed as a percentage of original thickness. It is desirable to maintain at a low value the compression set, since the development of slack space in a package during shipment may permit the item to move and incur damage as a result. This property should be checked for each packaging material under consideration according to standard outlined in Federal Cushioning Specifications.

Damping

Damping represents an unreturnable portion of the energy absorbing property of a cushioning material and is proportional to the velocity of the cushion motion. For example . . . a spring represents an essentially undamped cushion. Putty, on the other hand is an example of almost complete damping.

Efficiency

This property is the proportion of energy absorbed for a stated load and deflection, (compression). It

. . . HIGH VOLTAGE TUBES

PORCELAIN INSULATORS . . .



tells the difference between the load-deflection curve shapes of two materials similar in all other respects.

Density

Density is a unit of measure which indicates the pounds of material per unit volume, usually expressed in pounds per cubic foot. It provides an indication of the amount of weight added to the total package for a given volume. It is not a measure of compression or cushioning power of a material. Dense cushioning materials do not necessarily have good compression characteristics and light, low density materials can often have excellent compression properties.

Objectionable Properties to Avoid

Dusting, the occurrence of small particles resulting from severe flexing or vibrating of the cushioning material is undesirable for many applications. Such particles can contaminate or interfere with the mechanical operation of a product.

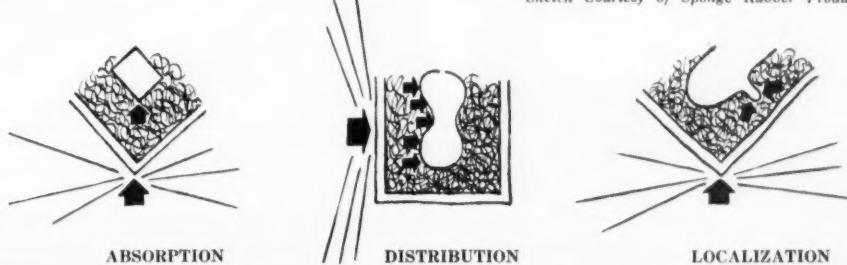
Corrosiveness can be another objectionable property in a material. Cushioning materials sometimes contain chemicals which release corrosive solutions when in contact with moisture. This condition might also arise where high temperature conditions cause chemical instability of the cushioning material to break down into corrosive compounds. One measure of this property is a pH determination of the water extract of the material which will indicate the acidity or alkalinity of any solutions released in the presence of moisture. However, this will not necessarily prove that a material is non-corrosive. The most reliable test would be to place the cushioning material in contact with the critical surface in question and subject it to the anticipated climatic conditions, and observe results.

Other Properties

Fungus resistance of cushioning materials is also of importance. Materials subject to shipment in warm, damp climates should be able to withstand attack by

ACTION OF CUSHIONING WHEN SHOCK OCCURS (see text)

Sketch Courtesy of Sponge Rubber Products Co.



FLUORESCENT LIGHT SHADES . . .



FOR EVERY FRAGILE PRODUCT, there is a "best" packaging method. High voltage tube, (far left, above) has cellular rubber next to tube and rubberized hair between inner and outer containers. Tiny grinding wheels rest in creped wadding lined box, (far left). Porcelain Insulators can be shipped in large quantities when packaged in steel strapped unit loads as shown in middle photo. Light shades, protected from shock by cellulose fiber, can be packed several to a container.



Continued

fungus or bacteria to prevent damage to the cushioning. Fungicides can be added to most materials to ensure this protection.

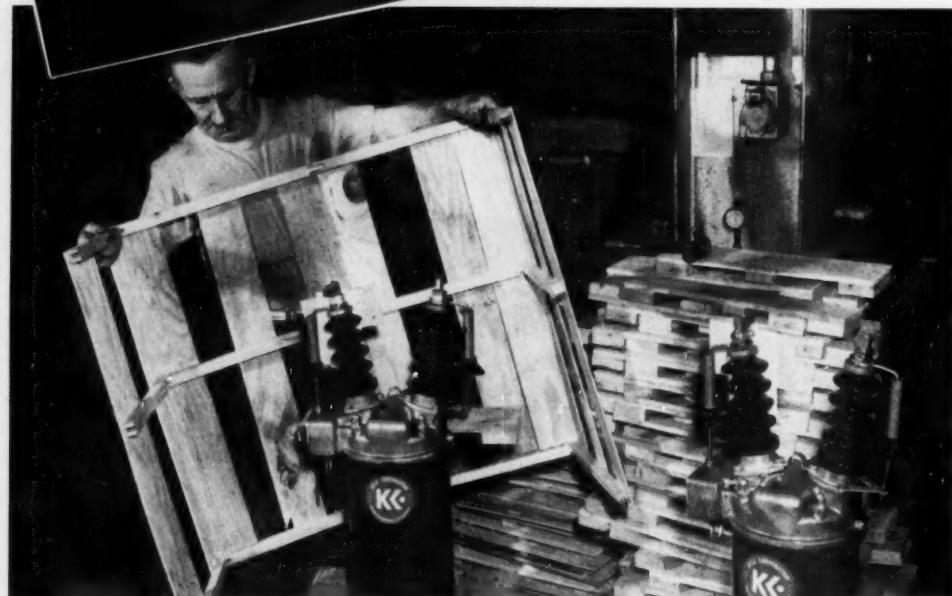
Effects of Moisture

Most cushioning materials, except those enclosed in moisture-tight containers, are subject to a variety of climatic conditions during shipment. Extreme conditions are represented by a moisture saturated atmosphere (100% relative humidity) and immersion in water. Such conditions may result in a marked lowering of the cushioning properties and an increase in corrosiveness of cushioning materials.

Regardless of the nature of your product, there is a cushioning material which will give it the kind of protection you want. Your biggest problem in choosing the correct material will be to study the many types available and then to choose the one which best suits your particular requirements. The information given on the preceding pages should help a great deal in assuring you that you are selecting the right type.

FLOW'S thanks to Sponge Rubber Products Co. for providing much of the information in the preceding survey . . . and to the following companies for material and photographs which they supplied: Impactograph Corp., Kimberly Clark Corp., Nichols Paper Products Co., Wood Conversion Co.

TELEVISION CAMERA TUBE needs protection from vibration. Tightly packed wadding keeps tube firmly but gently in place. Outer layers of corrugated board provide additional insulation from shock.



ELECTRIC CIRCUIT BREAKERS and reclosers are safely packaged in wirebound crates. Wood blocks

at base prevent shifting and wooden interior packing is bolted to top of device, to engage cleats on mat.

Acme Steel announces revolutionary new advance in wire stitching



In Acme Steel's new Arcuate stitching method, flat stitching wire is formed into an arc, increasing its column strength, making a smoother stitch with lighter wire, delivering up to 42% more stitches per pound of wire. Faster, too!

New Acme Steel Arcuate Stitching cuts wire costs 24 per cent

HERE'S HOW IT WORKS: Wire stitching has long been favored for assembling and closing of cartons of all types. Now "Stitching Headquarters"—Acme Steel Company—announces a new stitching method: Arcuate Wire Stitching.

In Acme Steel's new Arcuate Stitching method, regular flat stitching wire is formed into an arc by the stitching machine, making a stronger stitch so you can use lighter gauge wire for boxmakers' joints or any other stitching jobs. Increased column strength makes each stitch easier to drive. Stitches drive straighter, clinch better, hold tight.

RESULT: You save 24% in wire costs. You get 42% more stitches from each coil of wire (using .103 x .014-inch instead of .103 x .020-inch wire, for example). Arcuate Stitching virtually eliminates machine jamming—reduces down time and produces perfect stitches more consistently. This means that you can stitch more cartons per day, and get a better-looking carton every time.

It's easy to adapt your present equipment. There are conversion parts-kits for most popular model stitching machines.

CALL your Acme Steel representative for all information. Or, for a free folder giving complete details and a stitched sample, write to Acme Steel Products Division, Dept. F-63, Acme Steel Company, 2840 Archer Ave., Chicago 8, Illinois.

FREE →

Get the details... send in the coupon for a free folder on Acme Steel's new Arcuate Stitching.



ACME STEEL CO., Dept. F-63
2840 Archer Ave., Chicago 8, Illinois

Please send me free copy of your new folder on
Arcuate Wire Stitching and a stitched sample.

Name _____

Company _____

Street Address _____

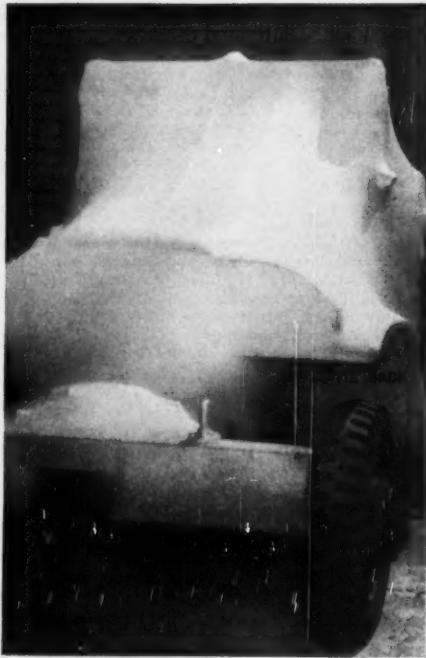
City _____ Zone _____ State _____

**ACME
STEEL**

STITCH IT... STRAP IT... SHIP IT... SAFELY!

Circle No. 89 on Reader Service Card for more information

Barriers, both rigid and flexible, strip spray films, "igloos", storage tanks, shrouds and other protective materials are all being tested for their effectiveness in long term storage of military supplies.



STRIP-SPRAY FILM is all that is required to protect this 2 1/2-ton, 5x6 Cargo truck cab and front cab. A dessicant is placed inside the cab before the film is applied. Film consists of four coats; a base, then a covering coat, an asphaltic compound, and finally, an asphaltic compound to which paste aluminum has been added for greater reflective value.



Here's What the Military Is Doing About . . .

PACKAGING

ALL manufacturers faced with problems of packaging products for shipment and storage will be interested in a program of experimentation and study which has been conducted by the Military in the years since World War II. It has resulted in better protection for material, and in reduced costs.

Just as our arsenals keep alive the art of munitions making during times of peace, so do they give their attention to all other pertinent functions of military production, though the emphasis on some functions is necessarily limited when there is a curtailment of funds. Even on a reduced budget, after World War II, some experimentation by the Military with new techniques of packaging continued. Then, with the sudden emphasis given to military production by the Korean conflict, packaging activities again came into their own. New type weapons and new equipment have brought new problems.

Unification of all the services under the Department of Defense has brought its own special problems, too.



EXPOSURE SITE where various types of containers are tested in the Ordnance Corps' long-range program. Steel and aluminum containers in a great variety of sizes and shapes are being used. Representative units are opened periodically on a predetermined tear-down schedule and condition of contents checked.

FOR PRESERVATION

Packaging requirements of all the services, though strikingly similar in many ways, vary in enough respects to greatly complicate the problem of reducing packaging specifications to a common denominator. Standardization of techniques has required careful examination and continuous study, and, needless to say, the job has not been an easy one.

Since a reorganization move several months ago in which all military packaging was made the responsibility of the Packaging division of the munitions board standards agency, much progress has been made and the future outlook is encouraging. A higher degree of standardization in packaging, packing, inspection and acceptance all along the line has resulted.

One of the missions of the Ordnance Corps is the storage of ordnance material for future issue to troops in sufficient quantity and quality to meet requirements of combat readiness. In 1944, the Experimental Long Term Storage Program had its inception with an investigation of various storage methods for preservation of anti-aircraft weapons for a period of twenty years.

Essentially, the program was designed to secure a basic supply of weapons in case of war until such time as new, modern weapons could be manufactured.

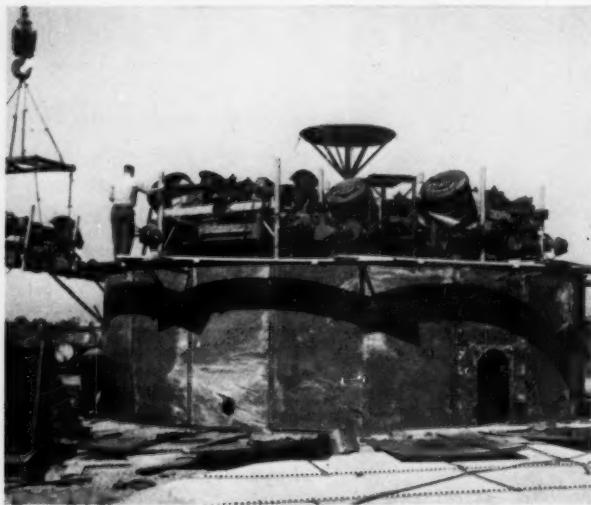
A further aim insisted that the methods should be practical from the cost standpoint. Ordnance contracts were awarded for research, development and tests aimed at achieving these objectives. The program was pressed vigorously. Vast quantities of the available literature on corrosion prevention of metals and preservation of materials were studied. Advice of recognized authorities on these subjects was incorporated into the program.

Containers Used

The use of steel and aluminum containers was finally decided upon to house the equipment selected for inclusion in the program. Over 1000 unit containers were designed and constructed by commercial firms working under contract with the Ordnance Corps.

Steel buildings, or "igloos" were erected, using a quantity of surplus steel plate of 7/16" thickness,

Military Packaging for Preservation . . .



STORAGE TANKS, 55 ft. in diameter and having a utilization space of approximately 14,000 cu. ft. are being used for storage in the Ordnance corps' program. Base of this tank is a six-in. reinforced concrete slab. Note that material to be stored is stacked inside the tank before its sides have been completely erected.

and approximately 40' long by 10' wide by 10' high. While bases for the gasoline tanks were 6" thick, reinforced concrete slabs, bases for the igloos were of two types. The first type contained an armored copper waterproofing sheet imbedded 4" below the surface and extending outward to the base edges. The second type held a base top of steel plate beneath which was a coating of asphalt mastic.

A four-coat system of strippable film was applied to most 2000 artillery and anti-aircraft weapons. Application was by spray gun and the method was known as "cocooning". The weapon was segmented with strips of cellophane tape so that voids of approximately 16" were produced and over this a vinyl web was sprayed to form a base. A second coat of the same material was applied to form a covering coat. The third and fourth coats were of an asphaltic compound to produce a more durable top-coating than could be secured

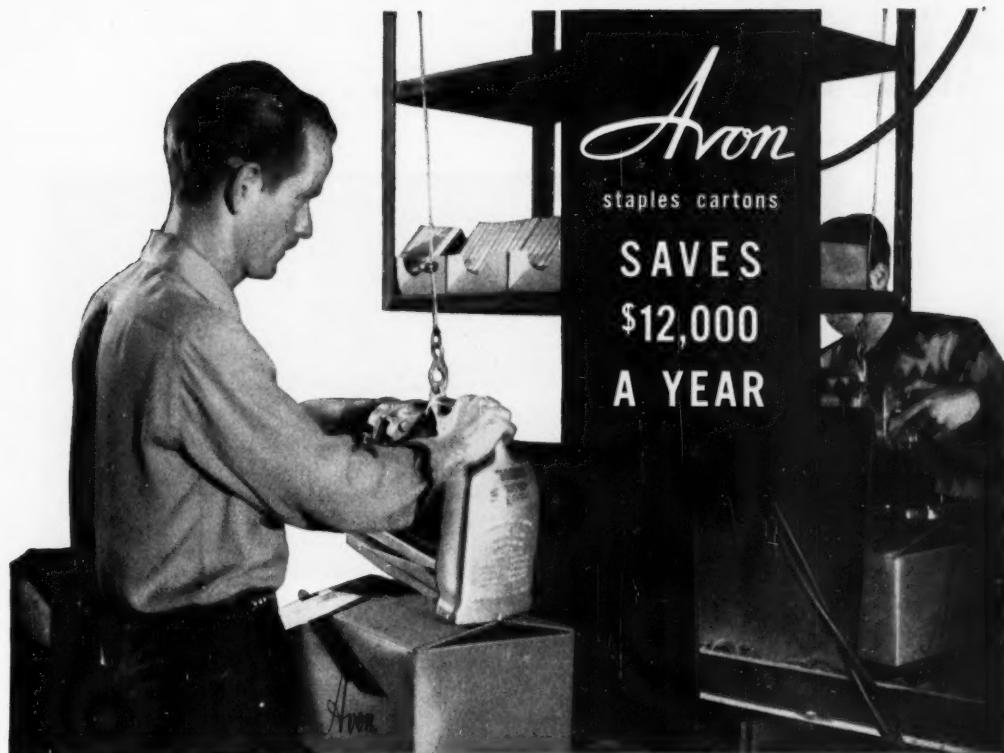
(Continued on page 140)



STEEL CONTAINER is opened with burning torch for inspection of generating unit it has housed. In almost every instance, contents of these containers has been O.K.



PLASTIC SHROUDS, only eight thousandths of an inch thick are available in approximately fifty different sizes. A shroud large enough to cover a machine weighing 20,000 lb. will only weigh about 30 lb. A volatile inhibitor wrapping, underneath, prevents rusting even though condensation settles on shroud and on the enclosed equipment.



Avon
staples cartons

SAVES
\$12,000
A YEAR

with International Stapling Machine



\$12,000 saved annually... more than \$43 a working day . . . through the use of an International Retractable Anvil Stapling Machine that permits the closure of corrugated or fibre cartons from the outside after they are filled!

That is what happens at the Chicago Branch of Avon Products Inc., a nationally known manufacturer of cosmetics and toiletries. The story is told by Mr. Melvin S. Davis, the Chicago Branch Manager. Here is what Mr. Davis has to say about the International Retractable Anvil Stapling Machines:

"Two years ago, we installed a portable, pneumatically operated International Stapler for closing

filled cartons of our products. Formerly, it took 32-man-hours to close between 1,500 and 2,000 cartons of varying sizes. With the International Stapler, this operation requires approximately one-fourth of the time.

"Obviously, we are pleased with this equipment, not only from the point of reducing operation costs, but for its general efficiency and ease of operation."

An International Stapler can substantially reduce your packaging cost . . . there are more than 30 different types . . . from 3½ lb. manually operated portable models for odd job closing to big multi-head automatic models for production closing of large cartons. Write for details.

Have you seen the new sound-movie, "Package for Profit"? It explains the principles of the retractable anvil stapling machine . . . and shows the equipment in actual use. Ask about bookings.

a seal of security



INTERNATIONAL STAPLING MACHINES

International Staple & Machine Company
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At the Packaging Conference . . .



Experts Discuss . . .

New Ideas in Packaging

At 22nd National Packaging Conference and Exposition, held from April 20-23 at the Navy Pier, Chicago, speakers included 30 top packaging experts from companies throughout the country. FLOW presents here, digests of some of the papers which were presented at the conference . . . Complete copies of talks will soon be made available for purchase by the American Management Association.

A New Approach to Packaging Organization

by **Edward A. Lindquist,**
Manager Packaging Division,
Production Department, National Biscuit Co.

Too many manually performed packaging operations still exist in industry. These operations by hand are expensive, inefficient, time-consuming and wasteful—and they are a stumbling block in the path of packaging progress. In this day of invention and electronics, to package manually is to continue to contrib-

ute unnecessarily to production costs and to merely mark time when we ought to be marching ahead."

The goal of packaging at NABISCO is mechanization and automatization of packaging lines to the greatest extent possible. Packages must be the type that will keep products ahead of the competition and at the same time will be economically produced and easily handled.

In the past five years NABISCO has started into production six new cracker bakeries equipped with high production band ovens. The change from the reel to the band oven has materially increased production tonnage. The reel oven produced 3,500 biscuits

per minute with hand packing. The band oven will produce 10,600 units of the same product every minute, making much more efficient packaging necessary. "With the demand for packages that provide greater protection for the product and have the necessary eye appeal, it has been mandatory that we re-equip practically every packaging line since the new plants started into production."

At NABISCO packaging is coordinated by a packaging committee composed of a chairman and representatives from purchasing, sales, merchandising, production, research, engineering, and advertising. This committee passes on all new packaging for existing and proposed products. Its decisions are binding on all departments, and when a packaging idea is adopted "the various departments proceed at high speed in turning the adopted idea into reality."

With top management represented on the packaging committee, its members are able to keep in constant touch with current developments in the field and make decisions. The latest information concerning new packaging is steadily shifted and reviewed and the findings used to help determine the best course of action for the packaging operation.

Committee Formed

Since automatic packaging requires a good deal of engineering, research, and production time, a sub-committee has been formed to do the basic exploratory work on new ideas for adoption of automatic packing and the use of new materials. This committee is composed of a representative of the laboratory and three members of the production department.

NABISCO is looking for packages that will retain the product's freshness and quality (shelf life), look attractive to appeal to the customer (design), be easily opened and reclosable, have identification, keep the product from breaking, and sell at a price the consumer can afford. This goal requires coordination of market research to determine consumer acceptance, advertising to supervise creation of the package design, purchasing to buy the materials, the laboratory for testing, the traffic depart-

ment for transportation of materials and product, and sales for distribution. Everybody gets into the act and works hard to make it a success.

The elimination of the cracker barrel was a milestone in the industry, but not until 50 years later was hand packing of crackers into cartons eliminated. These contributions are small and, above all, are too long in coming. As a whole, I think the advance of packaging equipment is slow when one starts making comparisons with the chemical field, the aircraft industry, radio, and television.

Getting Optimum Performance from Filling Equipment

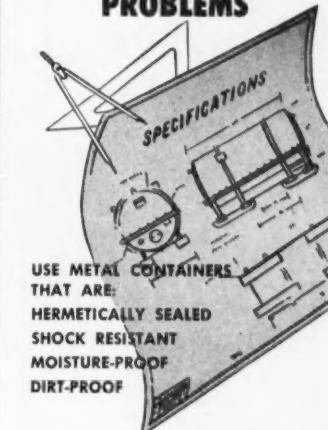
by Edward P. Lee
Technical Assistant to
Director of Manufacturing & Engineering
General Foods Corp.

Small losses make the difference between average and optimum performance on the packing line. The filling machine—the machine that measures out the product for the consumer and frequently sets the pace for the line—is an ideal place to begin to stop these losses and plug the profit leaks. To operate equipment at the maximum accuracy and capacity consistent with maintenance cost, container damage, and changeover time, the following points are suggested:

1. Select the equipment best suited to your need. Compare the various types of equipment available. Examine them in the field; "Ask the man who operates one." Test your product at the manufacturer's shop or in your plant. Selection of equipment on this basis, will "avoid the impulse buying that your merchandise manager is trying to promote at the retail level."

2. Establish indexes for performance in terms of accuracy and capacity. Accuracy of filling in the past has been considered secondary to capacity, but I believe this is unfortunate and wrong. I believe the spotlight being turned on this phase of filler operation

HERE'S HOW TO SOLVE YOUR SHIPPING PROBLEMS



ENGINEERED, DESIGNED AND BUILT TO MANUFACTURER'S SPECIFICATIONS

The most economical way to ship and store your delicate products is in a Champion hermetically sealed shipping container. It's dirt-free because it's sealed under pressure. It's moisture-free too, because special dehydrants are used in each container.



A typical Champion container, designed to protect products in shipment or storage.

HERE'S WHY IT'S ECONOMICAL—There's no extra labor necessary getting your product ready for shipment and storage. Just take it off the production line . . . place it in a Champion Container where it will be sealed for days or years. It's in perfect condition, and ready for service when removed from the container. Another cost saver—the containers are reusable!

DESIGNED FOR YOUR BENEFIT

- ✓ Your products can be taken directly off production line and stored in Champion Containers.
- ✓ Dirt-proof, moisture-proof, shock resistant.
- ✓ Preparation costs are reduced—ship and store in same container.
- ✓ Ready for use when taken from container—no extra preparation costs.
- ✓ Containers are reusable.

Let us help you with your container problem

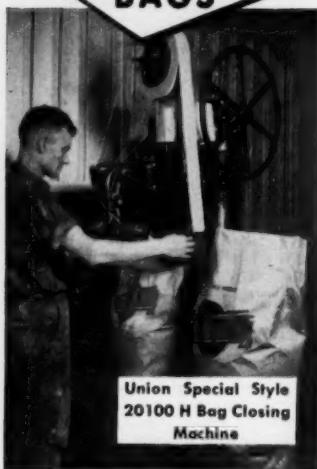
Write to Special Products Division—Dept. M
SPECIAL PRODUCTS DIVISION

THE CHAMPION CO.

SPRINGFIELD 99, OHIO

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*Here's how
to close
MULTIWALL
PAPER
BAGS*



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124

NEW IDEAS

Continued

by higher costs and shrinking profit margins confirms this belief.

Manufacturers' statements of machine accuracy can be used as a guide, but manufacturers are often limited in their facilities for testing and must use approximations. In submitting samples of your product, send several, representative of the range of physical variation, and in requesting weight accuracy statements, ask for the limits that will include two thirds of the individual weights.

Close and accurate supervision of filler operation and of product characteristics are the key to accuracy. Control methods do not in themselves adjust the filler or indicate the reason for an out-of-control condition. The well trained operator well supervised is our only recourse today.

Control of the physical properties of the product, particularly apparent density and flow characteristics, is a universal requirement for accuracy. Where measuring is done by the container itself, dimensional accuracy is essential. This is a problem for your supplier and you will find he can usually do better if you insist. Control of filler accuracy during operation can be improved by appropriate sampling methods.

Value of Accuracy

The value of improved accuracy can be determined from the cost of the product. A conflict between speed and accuracy often can be reconciled by equating the possible losses due to overweight with the possible gain due to reduced labor and overhead. Where product value is high, small gains in accuracy can be valuable.

To judge the capacity performance of a filler, use the calculated efficiency of the machine before attempting to judge the performance of the filler itself. Calculate an efficiency for the entire line by dividing the actual production by speed per minute multiplied by 480 minutes per eight-hour shift. If normal output is not 90 per cent of theoretical, you have a job on your hands. If it is not 95

per cent you have no reason to be complacent. The best way to find out where capacity is being lost is to use a high stool and a stop watch.

3. Control your product and exert every effort to eliminate unscheduled maintenance. Eliminate oversize pieces of material from the product and use uniform containers to avoid smashups. Establish and properly administer standards for timing and wear of parts to reduce unscheduled maintenance. When breakdowns do occur, there is no substitute for competent maintenance personnel. Control changeovers so that excessive time is not consumed by the change itself and by final adjustments made after production has supposedly been resumed. Proper storage of change parts is essential, and color coding is frequently advantageous.

Visual observation of equipment and container adjustment is sufficient to detect faults at machine speeds of 60 cycles per minute or less. At speeds of more than 350 a minute, the strobile is effective. In the middle area, into which most packaging equipment is progressing, observation is more difficult. Some are using motion pictures; some, test runs of carefully selected containers.

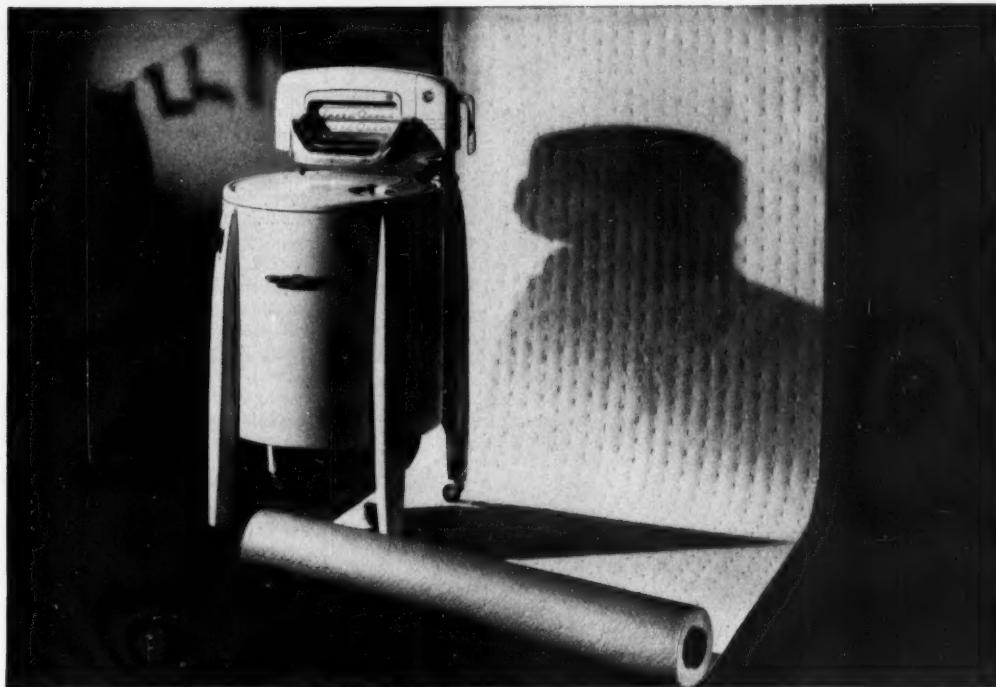
After capacity indexes and accuracy standards have been established, efficiency is above 90 per cent, and the desired accuracy has been achieved, then, speed may be increased. This way of increasing capacity should not be resorted to until accurate efficient operation has been established.

Obtaining optimum performance from filling equipment is an operating problem that requires the cooperation of management, engineering, and purchasing. There are no short cuts.

**Check-List of Packaging
Adhesives and Their Uses**

by Harold E. Smith
Chemist, Research
Department
Hiram Walker & Sons, Inc.

Industry's knowledge of the properties of adhesive is much less than it should be for today's high-



Custom Protection—prevents shipping damage as no other packaging method known!

How often do *your* products arrive at their destinations scratched, cut or damaged in any way? Once a year — once a month — or oftener? If you had a single instance of damage in transit last year, it may be time to change to *custom protection* with Kimberly-Clark Interior Packaging—KIMPAK*. Companies like the Speed-Queen Corporation who revised and streamlined their packaging operations have found that nothing else protects so efficiently, so economically.

KIMPAK is soft, grit-free, easy to apply as wrapping paper. It will absorb up to 16 times its own weight in moisture within 30 seconds—protect against shock, scratching, pressmarking, vibration. KIMPAK is feather-light, yet gives more protection than most materials of far greater weight and density. Many concerns have found this important in reducing the size and weight of their packages, to offset recent postal rate increases.

Regardless of the product you manufacture, KIMPAK—in its many specifications—can be "tailored" to fit your particular needs. Today—investigate *custom protection* with KIMPAK. For complete information, write to Dept. B-63, Kimberly-Clark Corporation, Neenah, Wisconsin.



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NEW IDEAS

Continued

speed packaging. The subject of adhesive testing has hardly been scratched. Basic materials for adhesive manufacture are natural products and subject to wide variation. The research needed for a complete investigation is out of proportion with that required in other fields and therefore difficult to justify. Performance testing is not always possible or desirable, and there are no standardized testing procedures.

Shelf life can be evaluated by placing dried glue films (on glass) in chambers containing different atmospheres and correlating the response of the glue films to storage life under varying conditions. This method is suited only to labeling on glass. Predicting machinability from viscosity, solids content, and other has not been too successful, making it necessary in many cases to run plant tests.

The supplier's representative should be present when a plant test is being run on an adhesive, so that he will be in position to take remedial action. A portion of the test production should be held in storage to confirm the shelf life correlation.

Extent of Testing

The extent of control testing, depends on what the packager deems significant for his operations. A visual inspection should be the minimum. Specifications for adhesives, are as controversial a subject as any in the field. Keep them practical by basing them on performance. Specifications based on physical and chemical property data will be applicable only for a given product.

Adhesives must be handled properly. Liquid glues are perishable. Purchasing must be regulated by usage and inventory. Inventory should be kept as small as practicable, and strict control should be exercised to use the oldest lots first. Manufacturers advise 60 to 90 days as maximum storage time.

Ready-to-use adhesives are gaining in favor, and dilution is coming to be regarded as "just another place where something can go wrong." When adhesives are di-

luted, they should be delivered to the packaging room in small quantities only as needed, and care should be taken not to mix incompatible glues. "Good house-keeping, along with strict handling procedures and good personnel management, is the best insurance against a whole host of troubles and headaches."

Alkaline modified starch products have largely replaced dextrins for labeling. The former, adhere well to glass, are not sensitive to wide extremes of atmospheric conditions, are moisture-resistant though not water-proof, are not attractive to insects and vermin, and are not easily diluted. Experience with animal glues for labeling has been limited, but so far they have not shown up any better than the average dextrin. Casein labeling adhesives, because they are relatively unaffected by immersion in cold water, are widely used by some types of bottlers. Resins currently are used only as a last resort for labeling with plastic films and metal foils, which cannot be bonded by the other adhesives. Resin films are waterproof and durable but are costly, less adaptable to automatic machines, and present solvent hazards and special cleaning problems.

Thermoplastic Adhesives

Thermoplastic adhesives are a relatively new and somewhat revolutionary development. Their bond is extremely durable, in fact, too durable for a packager with a reconditioning problem. They are, however, more costly than liquid adhesives.

Low-cost dextrin adhesives are satisfactory for ordinary requirements in carton sealing. To insure that the adhesive will set in time, drying devices are sometimes installed. If water resistance is required, the packager must resort to casein or resin base adhesives. A dry flake dextrin adhesive, which is mixed with water just before use, has become available within the last few years. Large-scale carton-making and sealing operations can justify a special mixing machine for the dry flake dextrin.

(more on next page)



Pamper Your "Perishable" Products - Ship Them in Gaylord Boxes

"Perishable" or fragile, whatever your product, the extra protection of Gaylord Boxes can help assure safe, undamaged arrival—whether you ship by land, sea or air.

Gaylord's Research and Engineering Division is always at your service. For information and helpful advice on the latest in packaging developments for your industry, consult the sales office nearest you. It's listed in the classified pages of your phone book.



*Their unseen quality gives you
an extra margin of safety.*

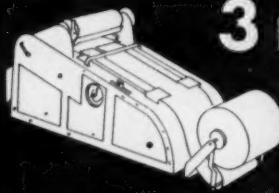
GAYLORD CONTAINER CORPORATION

General Offices: ST. LOUIS • Sales Offices Coast-to-Coast



CORRUGATED AND SOLID FIBRE BOXES • FOLDING CARTONS • KRAFT BAGS AND SACKS • KRAFT PAPER AND SPECIALTIES

Circle No. 70 on Reader Service Card for more information



3 label problems solved by one machine in one operation



SEND FOR FOLDER AND LABEL SAMPLES

If you are now using large quantities of shipping or identification labels, or if a Government contract has suddenly presented a new labeling problem, it will pay you to look into the advantages of the Weber Tag-O-Graph KC-E.

Weber

Addressing Machine Co.
Label and Marking Systems Division
Mount Prospect, Ill.

Shannon T. Mason Representative

Weber-Addressing Machine Co.
Label and Marking Systems Div.
239 W. Central Rd., Mt. Prospect, Ill.

Send descriptive folder on the Tag-O-Graph KC-E and samples of labels printed by this machine.

company _____

address _____

city _____ state _____

name _____ title _____

Model K Tag-O-Graph
addresses and marks 150
pre-printed tags or labels
per minute.

Stencil hand printers for
fast, inexpensive address-
ing or marking of tags,
boxes and labels.

West Coast Office:
Box 545 Colma Station San Francisco 25 California

Circle No. 156 on Reader Service Card for more information

NEW IDEAS

Continued

Specifications for Boxes to Run on High-Speed Equipment

by W. L. Romney
Technical Director of
Packaging
The Proctor & Gamble Co.

Packaging material specifications must be increasingly precise and uniform for modern high-speed production lines.

Just as the moving parts of an automobile must be made to closer tolerances as speeds increase, so must all the elements of material and workmanship that go to make up a carton be controlled within closer and closer limits. It takes modern, up-to-date equipment and good workmanship to produce a satisfactory carton for high-speed machines.

To insure satisfactory cartons, establish complete understanding and agreement on specifications between supplier and user. Keep standards high; insist that cartons be made uniformly and with precision. Use performance specifications whenever possible. And maintain quality with an adequate quality control follow-up.

Major Properties

Three major properties must be built into a piece of folding boxboard to make it an acceptable base for the manufacture of a high-speed carton. They are: proper and uniform absorption qualities; rigidity; and good bending qualities.

The first is probably the most important. The success of the gluing operation depends on it. So far as efficient machine operation is concerned, it is almost better to have the board uniformly out of limits than to have a small amount vary widely from a large percentage within the limits. At high speeds a packaging machine cannot adjust itself to wide variations.

Determine the absorption requirement that suits the operation, then spell out a test to meet your needs. Procter & Gamble uses water drop and ink absorption

(More on page 130)



Call GERRARD...

for the tie that fits the job!

● Gerrard Steel Strapping Division specializes in tying, and offers both twine and steel—whichever best fits your needs.

Gerrard's Twine Sealer is ideal for light tying jobs. It is completely automatic, and wraps, tensions, fastens and cuts the twine in 3 seconds. The fastening is not a knot—it is a metal seal that holds the twine in a non-slip grip that keeps bundles firm and tight until the twine is cut.

GERRARD'S TWINE SEALER is easy and fast to operate. Bundles are limited to 14" in width and 9" in height, length unlimited.



GERRARD ROUND STRAP holds cans firm for shipping. Machine on suspension can be moved aside when not in use.



COLLAPSIBLE PALLET-CRATE can be knocked down for return. Gerrard Straps hold contents safe and secure during shipment.



BUILDING TILE, palletized for shipment, is safely held with only two Gerrard Straps around the upper layers.

Gerrard's Round Steel Strapping is made in a range of sizes from 8 to 18½ gauge. It is widely used for reinforcing all types of bundles from parcel post packages to palletized machine parts and carload lots of lumber, steel pipe, plates, and machinery.

Hand-operated machines as well as the semi-automatic Q Model apply Gerrard's unique "twist

knot" which eliminates both the cost and the time of using a separate seal for each tie. All bundles and loads are held securely from plant to destination.

Because it is round, Gerrard Steel Strapping conforms to odd-shaped contours, and holds unpackaged items with the same firm grip that is applied to cartons and crates.

SEND FOR FREE LITERATURE *Blue Book of Packaging* and *Gerrard B.S.M.*

Twine Sealing Machine will be sent to you free on request. If you desire, a Gerrard engineer will survey your packaging procedures, and will make whatever recommendations will improve your operations. His advice is available free of charge.

GERRARD STEEL STRAPPING DIVISION, UNITED STATES STEEL CORPORATION
2937 West 47th St., Chicago 32, Ill.

U·S·S GERRARD STEEL STRAPPING



UNITED STATES STEEL

Circle No. 67 on Reader Service Card



Let us demonstrate Dial-Taping!

It's electric! Dial like a telephone for exact lengths of gummed tape, warm-water moistened for instant seal. Any length in any sequence without pre-setting. Safer packages, yet fully 20% saving in time and tape. Savings pay for machine in a few months. Without obligation, let us prove the Dial-Taper on your own packaging.

For more information or a free demonstration mail us this ad with your name and business letterhead

**MARSH Electric
Dial-Taper**

MARSH STENCIL MACHINE COMPANY
67 MARSH BLDG. • BELLEVILLE, ILL.

Which do you need . . .



Replacement . . .

Service . . .

Thermostatically controlled water heater, extra.

Better Packages, Inc.
WORLD'S LARGEST MANUFACTURERS OF TAPE DISPENSERS

Circle No. 123 on Reader Service Card for more information

NEW IDEAS

Continued

tests correlated with the type of adhesive and its type of high-speed operation.

Rigidity is important in feeding. When cartons are being taken away at a rate of four a second or faster, a raggy or flimsy carton "gums things up in about the same way as the slow thinker on a football team who can't keep the plays straight." Procter & Gamble has not found it necessary to pin rigidity down to a numerical value because the feel test is accurate within the limits needed for good operation.

Test the carbon board's bending qualities to get insight into the quality of stocks and the skill with which they were used. A good bender does not insure you of a good carton . . . but you can be pretty sure that you can't make a good carton out of a poor bender.

Fabrication operations are so

vital that it is advisable to pin down and spell out exactly what is needed. Once it was satisfactory to ask a carton manufacturer to match a sample. Now, it is essential to blueprint the carton in every detail, including score pre-breaking specification, details of size, ink bleed allowances, details of opening device, grain direction, and relative position of printed and unprinted panels.

Side seams should be well glued. One of the most aggravating interferences with efficient high-speed machine operation is lightly glued side seams and cartons glued out of square. Flaps should be cleanly cut and free from scrap if pile-ups are to be avoided. If cartons do not line up evenly on the feed rack, feeding difficulty can be expected; to prevent unevenness, roll the scores in proper relation to the glue lap thickness. Proper bundling is necessary to avoid warping. Inks must resist heat and rub, which can cause gumming up of belts and other parts and resulting shutdowns.

REPLACEMENT? SERVICE?

TRY COUNTERBOY 120

The all purpose gummed tape dispenser for shipping department or factory production jobs, Adjustable Moistening Control.

ASK FOR BOOKLET NO. 252

Fully describing and illustrating many different machines that are speeding up and saving gummed and pressure sensitive tapes on various packaging operations in shipping, pre-packing, and production departments.

CALL YOUR BETTER PACKAGES' DISTRIBUTOR

(See yellow pages of your phone book)

He's your packaging specialist, and maintains a fully equipped repair service with factory trained experts whose job it is to keep your sealing equipment in top condition.

BETTER PACKAGES, INC.
Plant No. 10, 25 Canal St., Shelton, Conn.

Please ask your representative to call and explain the advantages of Counterboy 120.

Send your booklet No. 252 describing 47 different gummed and pressure sensitive tape dispensers.

NAME _____

FIRM NAME _____

STREET _____

CITY _____ STATE _____

Selecting the Right Material for the Job
by Douglas Kirk
Mechanical Research Department
The Quaker Oats Co.

There is nothing static about materials for folding boxes. Materials are being improved more rapidly than many packagers appreciate, and these improvements often mean new or additional mechanical techniques. Therefore, manufacturers should keep material requirements flexible so that they can take advantage of new developments.

Many compromises must be made in selecting the correct material for a package since there is practically no perfect package. The following major points are suggested for consideration in selecting box material:

1. The consumer purchase price of the package product. If the product sells for a nickel or a dime, selection of materials for the package is thereby restricted. A box for an expensive Christmas gift is far removed from a box for breakfast cereal or a package of tacks.

2. The unit size of the product. A box of pencil leads or razor blades may give more leeway in material selection than a five-pound box of dog food or patching plaster or grass seed. The product's density also must be considered since it affects the weight of the package material required.

3. The distribution channel. Folding boxes used for "store pick-up items" present more problems than boxes for products sold before delivery. Supermarket or self-service drug store items are not comparable to small tools or automobile parts sold to a manufacturer. Problems involved in boxing consumer durable or soft goods differ from those involved in packing liquid milk in a paperboard box.

4. The end use of the package or product. A package of prepared cake mix or frozen foods is a single-service box that differs from a box of facial tissues, soap powder, or detergent that receives repeated use. Some boxes need to be

(Continued on page 145)



As easy as falling off an unstrapped pallet

You need steel strapping on every pallet load, whether it is handled intra-plant or shipped by carrier. You need it for protection to your workers, and the prevention of loss and damage to your shipments.

And—you need SIGNODE! Through its fieldmen, Signode can show you how to palletize the right way, no matter what you handle or ship. The services of these men and Signode's respected packaging laboratory are yours for the asking. Write Signode Steel Strapping Co., 2618 N. Western Ave., Chicago 47, Ill. Offices coast to coast. In Canada: Canadian Steel Strapping Co., Ltd. Foreign subsidiaries and distributors world-wide.

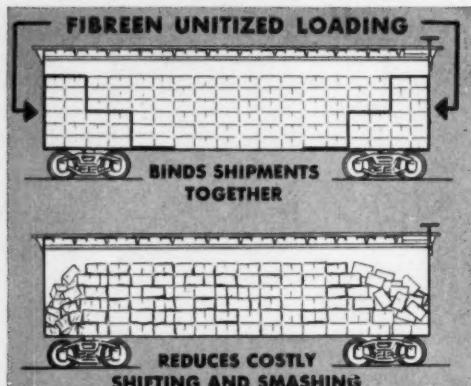
A basic method of preventing accidents to pallet loads in intra-plant handling.



SEND FOR FOLDER SHOWING 6 BASIC WAYS OF UNITIZING

Circle No. 30 on Reader Service Card for more information

STOP DAMAGE WITH THIS TOUGH, LOW-COST RETAINING PAPER



ON HUNDREDS OF SHIPMENTS
FIBREEN
IS REDUCING DAMAGE CLAIMS
60% TO 80%!

Waterproof, reenforced Fibreen—the toughest paper—holds shipments together as a unit, in spite of freight car jolting . . . humping and shunting.

Thousands of safe shipments are proof that unitizing loads with Fibreen is doing an outstanding job in preventing cartons, bags, etc. from being smashed in end-wells and voids.

Maybe it's the answer to your damage problems. Write to Dept. F-6 today for complete details on unitized loading and information on Fibreen for packaging.



The SISALKRAFT Co.
Chicago 6, Ill.

New York 17, N. Y. San Francisco 5, Calif.

Circle No. 148 on Reader Service Card for more information
132

PACKAGING & SHIPPING NEW EQUIPMENT

(Continued from page 109)

Heavy-Duty Block

A truck and trailer wheel block made of high strength cast alloy steel, recently introduced by the Calumet Steel Castings Corp. is designed to hold heavy vehicles and loads. Called the Casteel Safety Wheel Block, it incorporates a number of features that assure positive, safe holding under adverse conditions of grade, surface and load. The block is furnished with cast-in holes on the bottom plate to permit nailing to freight car or truck floors, shipping platforms, etc., to insure positive blocking of heavy equipment. Weight of a block is 12 pounds.



Circle 207 on Reader Service Card for more information

Pressure-Sensitive Adhesives

An open-tack and pressure sensitive latex product has been developed by Dennis Chemical Co.

FORCE
puts
marking
on the
assembly
line

**CONVEYOR
MARKING
ATTACHMENT**

Today's easiest way to print code numbers or dates on products . . . boxes . . . cartons . . . packages . . . containers. Available for installation on all kinds of conveyor lines. Automatic, self-inking, with instant-change type. Write today for Force Specification Sheet and catalog.

Circle No. 42 on Reader Service Card for more information
JUNE, 1953 • FLOW

for use on self-sealing paper bags, envelopes, boxes and cartons. Called Dennis No. 3143 Adhesive, the material is applied to two surfaces, dries rapidly by air, and by subsequent pressure of one coated surface to the other forms an immediate bond.

Circle 208 on Reader Service Card for more information

Automatic Jaw Sealing Machine

Maximum heat penetration to inner sealing bag surfaces is achieved by the use of cartridge type hermetically sealed heating elements mounted in both sealing jaws of this sealing machine manufactured by Amsco Packaging Machinery, Inc.

Heat, pressure and dwell time are all controlled automatically. An automatic folding bar automatically guides the bag tops between the jaws for either straight sealing or folding and sealing, and helps to prevent spillage from the open end of bags since bag tops are fed into the machine in a vertical or near vertical position. Standard dimension of sealing surfaces is one in. wide by 12 in. long, and may be crimp, flat or flat with horizontal head.

Circle 209 on Reader Service Card for more information



type hermetically sealed heating elements mounted in both sealing jaws of this sealing machine manufactured by Amsco Packaging Machinery, Inc.

Heat, pressure and dwell time are all controlled automatically. An automatic folding bar automatically guides the bag tops between the jaws for either straight sealing or folding and sealing, and helps to prevent spillage from the open end of bags since bag tops are fed into the machine in a vertical or near vertical position. Standard dimension of sealing surfaces is one in. wide by 12 in. long, and may be crimp, flat or flat with horizontal head.

Circle 209 on Reader Service Card for more information

Circle No. 103 on Reader Service Card for more information

Low-cost conveyor attachment marks cartons, cases automatically



Save man-hours now used for manual marking. Attach a ROLACODER Imprinter to conveyor or case-sealer and eliminate the cost of stencilling or rubber-stamping. Get neater, cleaner, more accurate marking, too. Friction-operated, self-inking. Copy changes made in minutes. Pays for itself in weeks.

Write for ROLACODER brochure
showing models to imprint top,
sides of every kind of package.

ADOLPH GOTTSCHO, INC.

Hillside 5, N. J.

Gottschos



STEEL STRAPPING saved this load of refractory brick when the heavy load caused the driver to lose control when the truck's right wheels sank into the road shoulder and plunged the truck and trailer into a ditch. Even though the force of impact twisted the coupling 90°, the 26,000 lb. load was held securely in place by the strapping. After being transferred to another carrier, the brick was delivered undamaged.

Courtesy Acme Steel Co.



for ruggedness and simplicity, long life and low maintenance. A real material handling cost saver. Available in various suspensions and speeds; in capacities 1000 to 6000 lbs.

Ask for Bulletin 668

DETROIT HOIST & MACHINE CO.

48th year—Designers & Manufacturers
of Hoists and Cranes
8243 Morrow St., Detroit 11, Mich.

Circle No. 127 on Reader Service Card

What's

NEW in useful FREE literature

The publications featured on these pages were written by experts. They are FREE publications. To obtain them use the postcard bound into this issue.

Truck Case Histories:

Case history folders telling how leading companies are using industrial power trucks are available in package form from Lewis-Sheppard, Inc., manufacturers of the Master line of industrial trucks. Companies in the food, motor freight, warehouse, paper, electrical equipment industries and others are covered in photo-story style.

Circle 161 on Reader Service Card

Crane Applications:

The Thew Shovel Company has produced a 12-page picture book showing the various applications of its crane line on docks, barges and ships. It contains numerous photos and short job descriptions.

Circle 162 on Reader Service Card

Front End Loader:

Literature describing the construction and industrial uses of the Baker-Lull Shoveloaders has been issued by Baker-Lull Manufacturing Company. Presented in two colors, the literature illustrates applications and attachments for the front end loader, lists specifications of the equipment and describes performance characteristics.

Circle 163 on Reader Service Card

Force-Feed Loader:

Complete description, specifications and photos of the Athey Model 3 Force-Feed Loader are available in an 8-page bulletin from Athey Products Corporation. Among the attachments shown in this book are an auger-feeder front

end for stockpile loading, winterized cab for year-round work, side discharge conveyor for faster loading of trucks, three rear axle arrangements to meet any type power or flotation requirements, a cleated belt for loading snow, and the availability of 3-foot conveyor extensions for over-cab loading.

Circle 164 on Reader Service Card

End Loaders:

A technical bulletin describing Galion Load-elevators, hydraulic end-loaders, is offered by the Galion Allsteel Body Company. The main catalog feature is a brief specification chart which permits the user to select the exact model best suited to his needs. Action photos, mounting diagrams, complete technical data information and operating hints are also included.

Circle 165 on Reader Service Card

Belt Maintenance:

A 32-page manual on the installation and maintenance of conveyor and elevator belting has been published by The B. F. Goodrich Company. More than 60 photos and drawings illustrate ways to improve belt service and to lengthen belt life. A chapter on how to select belts includes a discussion of belt design, covers, reinforcements and grades. There is a detailed review of the engineering information required to specify a new conveyor belt. Belt repair methods and belt splicing and fastening are covered in detail.

Circle 166 on Reader Service Card

Portable Belt Conveyor:

A 4-page illustrated folder showing applications and features of the Rapistan Stevedore, Jr. portable belt conveyor has been printed by The Rapiets-Standard Company, Inc. The two-color bulletin has photos and descriptions of typical uses and features of the unit, which is used in many types of industry for stacking, power boosting, and truck loading jobs. Specifications and features are charted.

Circle 167 on Reader Service Card

Bulk Handling:

A 16-page catalog showing the Tote System answer to bulk material handling problems has been published by Tote System, Inc. Tote is described as a complete, mechanical, automatic system for filling, transporting, storing, discharging, weighing and blending all types of bulk materials, including liquids. Included are photos of actual installations, mechanical diagrams, basic specifications and a table of economic advantages.

Circle 168 on Reader Service Card

Filter Catalog:

Catalog No. 106 from Marvel Engineering Company contains the latest information and improvements in the Marvel Synclinal filters for hydraulic oils, coolants and lubricants. The 12-page catalog also contains cutaway drawings, parts lists, dimensional charts, engineering data, typical installations, actual mesh sizes and flow and pressure drop tables.

Circle 169 on Reader Service Card

MOBILIFT "stand-ups"

Stand Out!



MOBILIFT *Stand-Up* type Fork Lift Trucks *Stand Out* for efficient, low cost materials handling in warehouses, terminals and plants because they get more work done faster.

Here's Why:

- 1 The operator gets on and off an ample size platform in a second or two. He works standing up — has maximum all around visibility.
- 2 MOBILIFTS are fast and agile. Compact design, short over-all length. 360° steering mechanism makes ZERO inner turning radius and 57" outer turning radius possible (2,000-lb. Model "E"). MOBILIFTS are long-time favorites for close, congested working areas.
- 3 LEV-R-MATIC push-pull controls speed all movements. NO GEARS TO SHIFT . . . push-pull levers for forward-back movements, elevating and tilting.
- 4 MOBILIFT air-cooled 3-cylinder engine delivers abundant, reliable power. It's compact, precision-balanced and accessible for economical operation with minimum repair and service.

Let a MOBILIFT Sales Engineer show you why MOBILIFT Stand-Ups in your business will *Stand Out!*

Write or wire MOBILIFT for complete information today . . . No obligation of course.



MOBILIFT CORPORATION

835 S. E. Main Street • Portland 14, Oregon

2317 W. 186, CHICAGO • 790 Patterson Ave., E. RUTHERFORD, N. J. • 2724 Taylor St., DALLAS
2720 San Pablo Ave., BERKELEY • 1112 Spring St., M. W., ATLANTA

Circle No. 110 on Reader Service Card for more information

Herringbone Gear Drives:

A 36-page Book No. 2519 on herringbone gear drives has been published by Link-Belt Company. It offers detailed information on Link-Belt single, double and triple reduction enclosed herringbone gear drives. Installation photos show examples of these drives in many types of heavy duty service. Listed are 39 sizes of drives in 534 standard ratios.

Circle 170 on Reader Service Card

Floor Resurfacing:

A technical data bulletin No. 62-B, descriptive of Cryptolite, the prismatic crystalline mineral added to Swift-Floor floor resurfacing and repair material, is announced by The Monroe Company, Inc. According to the bulletin, Cryptolite's irregularly shaped crystal are said to pack together to form an unusually hard, resilient, non-skid floor surface.

Circle 171 on Reader Service Card

Package Conveyor Belt:

A catalog describing a conveyor belt that moves packages and cartons up and down grades as steep as 55 degrees has been published by The B. F. Goodrich Company. Called "Ribflex Griptop", the belt has a special ridged and cross-cut rubber surface which provides the extra gripping power needed to operate on grades above 30 degrees.

Circle 172 on Reader Service Card

Riveted Roller Chain:

The Improved Baldwin Assembly riveted roller chain is described in detail in Bulletin No. 52-2 from Chain Belt Company. The graphic section in the bulletin describes how the chain is made up, not cut up, to any length. Features of the chain and the single pin coupler link are illustrated and described. Assembly diagrams and charts for all size chains are presented, as well as list prices and boxed assembly specifications.

Circle 173 on Reader Service Card

Smoother Engines:

Bulletin TC-649 has been prepared by Torcon Corp. explaining applications of its heavy duty hydraulic torque converters in accomplishing maximum lift truck performance. Besides utilizing engine power to a maximum, Torcon torque converters are said to eliminate shock, reduce maintenance on all driving mechanisms, and minimize driver fatigue. Engines, gears and other parts are said to last longer and downtime is virtually eliminated.

Circle 174 on Reader Service Card

Motor Truck Scales:

An 8-page folder, Form No. 678, from The Howe Scale Company illustrates and describes the complete line of heavy-duty Howe four-section straight lever ball-bearing motor truck scales for weighing truck and trailer loads. The folder reviews and illustrates many features, and lists complete specifications and pit dimensions.

Circle 175 on Reader Service Card



Lewis has the container for every problem whether it be stampings, castings, plastics, wood, metal or textiles. All containers are engineered to fit the need.

Representatives from coast to coast

LEWIS
INDUSTRIAL CONTAINERS

6067 MONTGOMERY STREET • WATERTOWN, WISCONSIN

Circle No. 132 on Reader Service Card for more information

Silent Platform Truck:

The Hamilton Caster & Manufacturing Company announces a platform truck designed especially for department stores, office buildings, hotels, hospitals, schools and other establishments where quiet operation is essential. The truck is described in Bulletin No. 97, which also contains complete specifications.

Circle 176 on Reader Service Card

Telemetering Booklet:

Bulletin M1710 from The Bristol Company contains information on the use of the company's Metrometer telemeter for remote measurement and automatic control of variables over distances ranging from a few feet to many miles. Information and engineering data are given on modern methods of telemetering.

Circle 177 on Reader Service Card

Power Sweeper:

A 4-page catalog describing the Commander Moto-Sweeper has been released by The Moto-Mower Company. The sweeper, with dual brushes arranged in tandem and operating in opposite directions, together with vacuum dust control, is said to provide a triple action sweeping principle. The dual sweeper is adaptable to both large and small areas.

Circle 178 on Reader Service Card

Motors and Generators:

A motor and generator reference booklet to assist in the selection of motive power to handle most industrial applications is made available by Allis-Chalmers Manufacturing Company. The 50-page pamphlet is reprinted from the 1952 edition of Lincoln's Industrial-Commercial Electrical Reference published by the Electrical Modernization Bureau, Inc.

Circle 179 on Reader Service Card

Loaders and Unloaders:

Stephens-Adamson Manufacturing Company offers Bulletin 253, which describes this company's

loading and unloading equipment for cars and ships. The bulletin is well illustrated, and contains engineering drawings and specifications of equipment which will handle practically any bulk loading or unloading job.

Circle 180 on Reader Service Card

Protective Packaging:

A 4-page bulletin entitled "Protective Packaging" is available from Cincinnati Industries Inc.

The bulletin describes a variety of packaging uses for two Cindus kraft products—Corrucrepe, creped and corrugated for stretch in every direction, and Elastikraft, deep-crinkle creped to provide flexible utility protection. According to the bulletin, these products can be used as bale wrapping, interleaving, cushion pads, sewn covers, tarpaulins or drop cloths, sewn liners for bags, barrels, drums or kegs.

Circle 181 on Reader Service Card

Want a brownier, easier controlled one-man lift to handle bulkier loads in close quarters—narrow aisles—or anywhere in or about the shop?

Then try the . . .

Stronger, fabricated construction . . . Floor level loading . . . Adjustable forks in range of lengths . . . Rear swivel casters for extra maneuverability . . . Hand lever safety brakes . . . Straddle-type base in various widths . . . Remote control (on battery models) to use lift as a portable elevator . . . Many other features.

*BIG JOE

**PEDAL OR BATTERY OPERATED
HYDRAULIC LIFTS**

STEP-ON-IT UNITS

Capacity 750 lbs. Lifting heights to 68". Pedal control. Priced from . . .

\$281.50



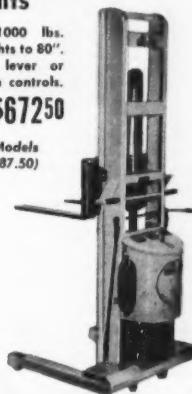
(Other Models
from \$236.50)

BATTERY-OPERATED UNITS

Capacity 1000 lbs. Lifting heights to 80". Finger-tip lever or push-button controls. Priced from . . .

\$672.50

(Other Models
from \$587.50)



OVER 30 MODELS TO MEET YOUR SPECIFIC MATERIALS HANDLING NEEDS

Write for specifications on all models

Distributors in Principal Cities

BIG JOE MANUFACTURING
COMPANY
900-08 W. Jackson Blvd., Chicago 7, Ill.
Cable Address: Big Joe

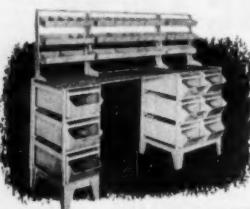
*T. M. Reg. In
U. S. Pat. Off.



Circle No. 141 on Reader Service Card for more information

NEW **BATHEY**
PRODUCTION
AND STORAGE
EQUIPMENT

Slash inventory losses, moving and storage labor. Reduce or eliminate wasteful production worker motions. And uncover hidden floor area. All this by installing Bathey versatile small parts equipment. Assemble without tools for today's need, change quickly for tomorrow. Move by sections with lift trucks. Remove any pan or bin without disturbing its neighbor. Parts visible, no dividers. Ideal for assembly lines and benches, stock rooms, parts departments, tool cribs, maintenance and repair departments.



Unlimited arrangements possible, using Bathey Tote Pans, Pressed Metal Pallets, Tote Pan Adapters (see above). Make versatile assembly benches with hopper type Tote Pans, Bench Bins in 5 sizes, keep parts at fingertips, bench work areas clear. Good plant housekeeping habits promote profits, reduces parts lost, increases production. Send for complete information.

Brochure

"Worth Its Weight in Gold"
Send coupon on letterhead

Name _____

Company _____

Address _____

City _____

84" Parts Bin—
Up to 360
Different Parts



BATHEY
MFG. CO.

105 S. MILL STREET PLYMOUTH, MICH.
Circle No. 57 on Reader Service Card

HANDLING CONTROLS

(Continued from page 79)

had to be lifted from the racks and placed on a conveyor which carried it into the furnace. It is easily seen that if a part required several coats of different colors, the handling to and from rack and conveyor could become extremely expensive under the old method.

Now, sprayed work is hung at the spray booth directly on special alloy burning fixtures which are suspended from a monorail. Work remains on the same fixture through every operation until it is completed and ready for shipping. Many of the handling operations which were once unavoidable are now eliminated, and those which remain are considerably easier.

Seldom does a piece of work ever hesitate in its progress through the shop or end up in storage on the floor or on trucks before it is completed. The system entails a somewhat heavy expenditure for alloy burning fixtures and overhead track, but the investment has been fully justified in the opinion of W. A. Barrows, president of the company.

TWO-STORY FLOW

(Continued from page 72)

at the end of the triple deck conveyor, are placed in a tray on top of a special aluminum truck. These trucks are in a position to be towed by either of two overhead conveyors. One, 800 feet long, tows the trucks through the Drug side of the warehouse for order filling. The other, 1200 feet long, tows the trucks through the Sundry side, tows all filled trucks to the packing area, and also returns all empty trucks to the starting point for dispatch with new orders. Regular orders are filled in a manner similar to that for the Rx orders—with a double check system.

One of the highly practical devices used in the overhead conveyor system allows trucks being towed through the drug section to be automatically transferred from this conveyor to the sundry conveyor. The sundry conveyor tows all trucks from this automatic

MADESCO

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transfer point to a section of the packing area which is separate from the Rx packing.

Packing Area

In this packing area, an overhead trolley conveyor is used to supply empty cartons to the packing personnel. Cartons are stapled into form and hung from the 400 foot long conveyor, which continuously passes over all the packers to supply them with various sizes needed. (The use of this conveyor eliminated the necessity of a "runner" to supply the boxes and reduced the confusion which can be created by personnel and equipment clogging the aisles.)

From the two packing areas the orders, Rx and regular, are carried by a system of belt and roller conveyors, which join into a common system for both types of orders and delivers them to the weighing station located on the first floor. Orders are placed directly on the conveyors by the packers, and where they transfer from one conveyor to another, either in straight line or at 90 degrees, progressive speed increases in the conveyors, spread cartons to prevent jamming. As each package is weighed and marked at the central control station, it is placed on one of five belt conveyors for proper distribution to the respective carrier location on the shipping dock.

In addition to the above equipment, six inclined belt conveyors are used to deliver cartons of products from the first to the second floor to replenish shelf stocks. Palletized storage is widely used on the first floor, with lift trucks doing the handling.

Automatic "Engage" or "Disengage"

The aluminum trucks towed by either of the overhead trolley conveyors run on rubber tired casters, with a swivel type in front and a fixed type in the back. On the front end is the conveyor-engaging mast, which is constructed of a lightweight channel. In the channel is a movable rod which can be placed in an "engage" or "disengage" position by the operation of a treadle located directly below the mast. Automatic disengagement from the conveyor is simply

brought about by a following truck "bumping" the truck ahead, at which time actuation of the treadle drops the rod down into the disengage position. Each successive truck will be disengaged in sequence and held in this manner until the first truck has been placed in a position to be towed by the conveyor. With this feature, an order-filler may manually disengage a truck by simply pulling the front of it slightly to one side until

his part of the order has been filled—during which time all trucks coming up to his truck will automatically disengage themselves from the conveyor. Thus, a large bank of trucks disengaged from the conveyor is kept in line and in rotation in the order-filling areas. Once the order has been filled, the truck is moved into position to be engaged by the conveyor and automatically towed away to the packing area.

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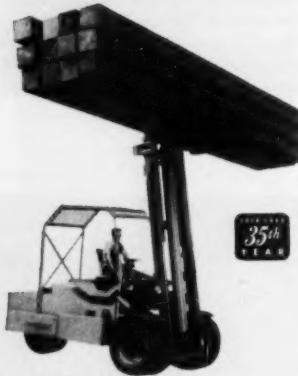
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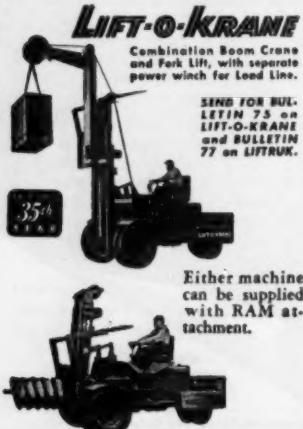


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MILITARY PACKAGING

(Continued from page 120)

from the unsupported vinyl. The fourth coat differed from the third in that paste aluminum had been added for greater reflective value. Of the 2000 units preserved in strippable film, ten were assigned to the experimental exposure sites for testing. A two coat method was used on five of the ten selected, a first coat of film known as OS 3602 and a second coat of a proprietary asphaltic compound.

Metal Container Storage

The capacities of the metal containers used on the Experimental Long Term Storage Program ranged from 55 gallon drums, with a utilization space of 8 cubic feet to gasoline storage tanks 55' in diameter and having a utilization space of approximately 14,000 cubic feet. Special containers of both aluminum and steel were constructed to house varying types of artillery and fire control components. Preservation for this stored material has been mainly of three types, 1. on nitrogen gas, under pressure of 3 to 6 psi at 70° F. using a static type dessicant; 2. balanced pressure barriers, which employ solar radiation breathers, and 3. dynamic dehumidification of the containers, with application to both single and multiple tanks. In addition to these three methods, several other preservative media were tested, among which were immersion in oil and the use of a volatile corrosion inhibitor. The contents of some 13 drums were immersed in oil but it became apparent, early in the program, that the disadvantages of this method would outweigh the advantages. Kraft paper, impregnated with volatile type inhibitor, was used as the preservative medium in two of the gasoline storage tanks. Excessive moisture accumulating in the interior roofs of the tanks unfortunately leached out the chemical concentration, nullifying the test results.

The balanced pressure barrier type pack, constructed of light-weight aluminum alloy, is used to store complete anti-aircraft weapons. Aluminum was selected due to its low weight in shipment and be-

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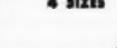
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DRAG CLAMP



3M-1



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cause of its definite resistance to atmospheric corrosion, with consequent lower maintenance cost. Light steel construction would also be suitable, since internal pressures need not be considered.

With this type of container a solar radiation breather is used, which prevents moisture from entering the pack as breathing takes place. Air enters the container through the breather due to changes in temperature and barometric pressure. The moisture in the air is then absorbed by the silica gel in the breather. When breather and container are warmed by heat from the sun, the expanding air leaving the pack through the breather reactivates the silica gel by removing the moisture to the outer air. Breathers are painted black to take maximum advantage of solar radiation. The sites selected for storage were required to have adequate space to provide full exposure to the direct rays of the sun of top surfaces of all containers. The relative humidity within the packs is still being maintained at 30 per cent or less.

Combined Methods

The balanced pressure barrier was combined with both dynamic and static methods in dehumidifying the steel igloos. Five solar radiation breathers operate with the balanced pressure barrier method. Each container is packed with 40mm AA guns, 75mm pack howitzers and one 240mm howitzer and wagon. Some containers were designed for the equipment to be packaged, notably the aluminum containers housing the 40mm and 90mm anti-aircraft guns and 75mm and 105mm howitzers in nitrogen, together with steel containers designed for larger fire control instruments.

Representative packs are being opened periodically at the exposure sites in accordance with a pre-determined tear-down schedule. Contents are checked carefully and technical data obtained. So far, with minor exceptions, the packs at the exposure sites are performing satisfactorily. Recently, at Pueblo Ordnance Depot a Director, M7A1B1, was removed from a nitrogen filled steel container in which it had been packed in 1945.

(More on next page)

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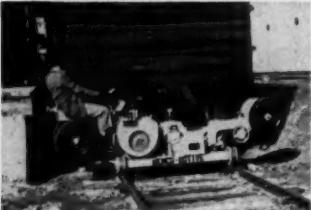
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MILITARY PACKAGING

Continued

On preliminary test check at the Director Shop it showed readings closer to the requirements than those taken at the time it was packed. Removal of generator units from nitrogen filled steel containers, and 40 mm AA guns from strip-spray film enclosures has been observed and the results were very good to excellent.

The above program is going forward under the able technical direction of the Pitman-Dunn Laboratory at Frankford Arsenal. Investigation of new methods and materials is continuing and it is hoped to make additions to the packs now at exposure sites, incorporating advanced techniques.

Storage Methods

Devising long terms storage methods is only one phase of the Ordnance packaging problem. Protecting vitally important shipments until they are in the hands of troops in an urgent goal to-

ward which efforts are primarily directed. Arsenals, laboratories and ordnance depots are working on various phases of the major problem of improving pack design and preservation methods. The Joint Military Packaging Training Course at Rossford Ordnance Depot gives basic training to personnel of the Armed Forces and industry. Established in October, 1950, it meets a need for rapidly qualifying new packaging personnel and for reindoctrinating the experienced.

The Ordnance Corps is now striving for preservation techniques that will guarantee a minimum shelf storage life of ten years. If costly maintenance in storage programs are to be reduced or eliminated, it is obvious that better preservation and better methods must be applied. The cycle starts with the cleaning process and if this is not done thoroughly and carefully, all the expensive work that follows may be wasted.

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production storage of large units. New formulations of the vinyl and "overcoating" materials can be applied at a cost of 15 to 20 cents per square foot for the two coats, less labor. When the film can be supported by the surfaces over which it is sprayed, a better pack is formed, since there will be no sagging or drag on the edges. The vinyl film, single coat, is presently being tested in shipment as a seal for the breech and muzzle ends of large artillery gun tubes.

One field of experimentation kept active under a reduced budget after World War II, which is currently "paying off", is that of volatile corrosion inhibitors, or VCI. Though the test results in gasoline storage tanks were nullified, as has been mentioned, the inhibitors have undergone other numerous extended tests and are now in use in controlled applications which more directly involve preservation and packaging of articles for immediate movement into distribution and use. Prior to the Korean emergency, emphasis was, of necessity, on experimentation in preservation for storage.

Volatile Inhibitors

Volatile corrosion inhibitors, function by volatilization, with the resultant vapors permeating the pack. Upon contact with the metal, some of the vapors condense and form an invisible protective film entirely surrounding the packaged article. They are now proposed primarily for the protection of ferrous metals, though tests are currently being conducted to test their effectiveness with other metals. Items of both ferrous and non-ferrous metals, after a 23-month Ordnance Corps test under Arctic, temperate and tropical conditions, were shown to have received better protection with volatile corrosion inhibitor packaging than with the usual methods.

A dramatic application of volatile corrosion inhibitors that has now been approved and adopted by all the services, is in the preservation of rifles. The time consumed in readying an M1 rifle for combat has been cut from hours to minutes by substituting VCI preservation for the older method of

(More on next page)

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MILITARY PACKAGING

Continued

greasecoating. A rifle stored or packaged in a volatile corrosion inhibitor envelope has only to be extracted and wiped to be ready for firing.

Other Applications

Another interesting application is the use of VC1 to protect flat car shipments of heavy production machinery, such as gun-boring lathes, millers and grinders. The inhibitor material is applied to heavy kraft paper which is used in both shredded (similar to excelsior) and sheet form. The shredded material is packed into cheesecloth or similar loose fabricated batts or bags which can be tucked into gear boxes or wrapped around any critical parts where it is desirable to build up a corrosion preventive atmosphere.

A concomitant development is the use of plastic shrouds with volatile inhibitor impregnated

wrappings underneath. The inhibitor prevents rusting of precision surfaces even though moisture from condensation or other phenomena settles out under the shroud.

This history of the development of the plastic shrouds at the instigation of Army Ordnance is another of the success stories characteristic of the invaluable Industry-Ordnance teamwork inherent in the National Defense program.

The money saved by the use of these shrouds is expected to be considerable since the packaging materials they replace are several times more expensive. Ease of application and the savings in labor are additional advantages of in-calculable value.

The sequence of test, evaluation and use continues. The close relationship existing between Ordnance Corps and Industry is well known. Working as a team, as they have done in the past, they will produce better packaging methods for shipment anywhere in the world and for indefinite preservation.

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NEW IDEAS

(Continued from page 131)

functional, some need to be silent salesmen; and some must be both.

In selecting the correct material to box a product, the manufacturer also must keep in mind ease of opening the box or "depackaging." If the product requires a loose interliner or bag, for example, it does not lend itself to a trick pouring spout.

Compromise Necessary

The packager must compromise among the varied characteristics of the materials available in planning the box best suited to his purpose. He also must reach a balance between the strength of the unit boxes and the outer shipping case for transit protection. Both the shape and the contents of the box are relevant factors. It is senseless to overprotect packages. The real test is an actual shipping test.

Comprehensive information on box materials is sometimes difficult to obtain. No manuals are available because there are so many different forms of packages. To get the answers on materials, it is suggested that one go to the research and development departments of suppliers, to independent laboratories, to consultants, and to others who package products.

Packaging of Odd-Shaped Parts

by Carroll W. Evans
Superintendent—Parts & Accessories Division
The Studebaker Corp.

Odd-shaped parts need not always remain odd-shaped parts; sometimes the product can be redesigned to eliminate the special packaging problem.

Studebaker gas tanks for several years had a long, integral, non-detachable crooked spout which presented a never-ending problem in packaging. Finally the tanks were redesigned to include a detachable spout which is now shipped unassembled.

(More on next page)

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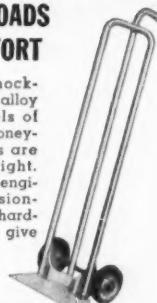
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NEW IDEAS

Continued

Some irregularly shaped items can be shipped unpackaged, and others may be grouped and packed in a standard case without advance preparation. But some do demand special packaging, and that packaging calls for an unusual amount of common sense, some imagination, actual packaging experience, understanding of materials handling procedures and equipment, and good contacts with suppliers of packaging material on the part of the package designer.

The experienced packaging engineer will always come up with a design that is as simple and as low in cost as possible, no matter how odd the shape of the product. Studebaker attempts to make the product fit the package, the package fit the pallet, and the pallet fit the method of transport.

The following are several general rules suggested to make packages as easy to handle as possible: Try to hold weight within the limits of 30 to 50 pounds, because even if an item is palletized, it usually has to be stacked on the pallet and unloaded from the pallet by hand. Packages that are too large or too small are hard to palletize effectively. Small packages may be handled in wirebound pallet boxes. For maximum stability in stacking, the height of a package should be less than the width or the length. Perfect cubes are difficult to palletize. To utilize the maximum strength of the container, design the package so that



"How much sleep you been gettin' at night, Osborn?"

the corrugation runs vertically when the package is stacked.

Parts and accessories distributed in volume from Studebaker factory warehouses often are advance packaged as an individual part or kit combination to protect precision and high-finish parts and items subject to handling damage and to provide a logical merchandising package. Advance packaging also is used to provide minimum warehouse stock quantities of high-volume items so that delivery may be speeded. Standard packs are established in quantities designed to reduce processing time to a minimum.

Specific Methods

Many specific methods are used for packaging odd-shaped products at Studebaker. Heavy items requiring protective packaging are sometimes packed in wirebound boxes. Special interior packing for odd shapes is provided for a large proportion of corrugated cartons. Also used are wood boxes, plywood boxes, crates, fibre contain-

ers, latex seal envelopes, polyethylene bags, padded shipping bags, excelsior pads, strapping, bundling, and wrapping materials.

Each packaging problem is a separate and distinct problem, and that is where the packaging engineer shows his ability to make use of the best type of pack for the particular item under study. If more than one method presents itself, cost is usually the deciding factor.

Packing of Fragile Items

by R. Frank Weher
General Supervisor
Material Handling Research
Manufacturing Research
Department
International Harvester Co.

Packaging is only part of a cycle that is tied into production, inspection, plant movement, storage, loading, and shipping, and the packing engineer's duties should be broad enough to encompass

(More on next page)

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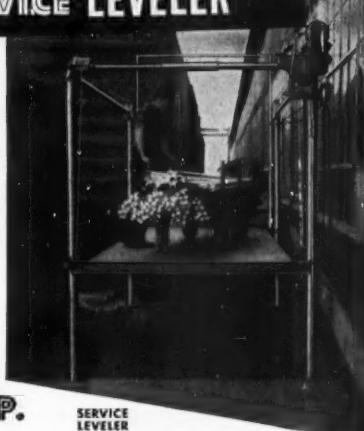
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3 times MORE LIGHT
with a LIGHT INTENSIFIER

Excellent for INDUSTRIAL use—attach a LIGHT INTENSIFIER to any 25, 50 or 100 watt bulb to direct a concentrated beam (3 times more light) where the worker needs and wants MORE LIGHT. On machine work it has no equal. Used in many large plants. Only \$1.00 each. \$9.00 per dozen, \$96.00 per gross all postpaid. Order trial dozen today with full money back guarantee. Don't Delay—Order Today!

**\$1.00
each**

LIGHT INTENSIFIER CO.
(Dept. FLOW)

716 Van Dyke, Detroit 14, Mich.

Circle No. 47 on Reader Service Card
148



FINGERTIP CONTROL

Revolator Go-Getter—telescopic straddle type lift truck—a bear for work in crowded areas, narrow aisles. Fully automatic—extraordinarily maneuverable 200° turning arc—2500 lb. capacity—very slight operator training necessary. Write for full details of this and many other models.

REVOVATOR CO.

8739 Tonelle Avenue North Bergen, N. J.
Circle No. 28 on Reader Service Card

NEW IDEAS

Continued

pass all these operations from the standpoint of product protection. The packaging engineer should be considered on a staff level, and his experience should be on a par with that of other top engineers in the organization. He should select his staff from the best men available and train them in all phases of packing.

A good packing program should start at the top management level. A detailed plan of procedure should be worked out. If the original survey plan . . . is sufficiently broad to cover all characteristics of a progressive packing program, the actual application in a plant operation will be comparatively simple.

Study Should Be Made

Study also should be made of all handling methods related to the packing operations. Material flow in a packing operation sometimes means the success or failure of the system. Much can be done to improve layouts for straight line operation; it is not uncommon to find that distance of travel of material to and from typical operations can be reduced by from one half to one third.

The program also should include an adequate packing cost control system, with a staff man assigned to keep the control plan effective. If controls are to be maintained, the packing and handling supervisory force must be interested and enthusiastic. Each supervisor should be informed at least monthly of his cost accomplishments in maintaining his cost objectives.

At International Harvester, planning for over-all packaging programs is centralized in the material handling research section. New packing and material handling methods and facilities are developed in the material handling research laboratory and made available to all plant operations as soon as they have passed laboratory and field tests and requirements.

The laboratory staff, work closely with material handling engi-

neers and plant staffs in any development that concerns the latter groups and are available as consultants for all Harvester operations. They also maintain contacts with representatives of vendors and suppliers and with outside industries and laboratories.

Personnel Make Visits

Research and plant personnel regularly visit Harvester distribution points in the United States and Canada to get first-hand knowledge of the condition of products received. The laboratory and plants also are kept informed of protective conditions that need investigation through district sales office reports on irregularities in loading and packing.

Export shipments of fragile and precision mechanisms pose special packing problems. Export shipments receive many different kinds of handling. They must be cleared through customs; sometimes they are transported by river boat, plane, or truck; in many cases vehicles are assembled at ports and

driven inland on their own power under trying circumstances. Often they are stored for long periods in damp, inadequate warehouses. Pilferage is common. In many countries, if vital parts are damaged or missing, equipment is unusable until replacements are received from the United States.

Trends in Harvester's export packing include improvements in storage and warehousing methods to give added protection and conserve large areas formerly wasted through antiquated practices; export packing by contractors at ports, often including cargo containers to help prevent damage to fragile goods and stop pilferage of small articles; improved knowledge of handling and storage conditions in foreign countries; special training for packaging engineers; and coordination of the efforts of shippers, railroads, ocean carriers, marine underwriters, and others interested in adequate export packing.

Packing research efforts have paid off by giving additional safety.

(More on next page)

Circle No. 58 on Reader Service Card



SHOWS HOW

- 1** man can move
- 3** tons of material in
- 60** seconds with

a **B-G** CAR UNLOADER

see your B-G distributor
or write
Barber-Greene
AURORA, ILLINOIS, U. S. A.

TO "HANDLE WITH EASE"
CHOOSE *Clark* LIFT JACK MATERIALS HANDLING SYSTEM

Clark

ALL STEEL WELDED TRUCK CO.

Circle No. 90 on Reader Service Card for more information

- FLEXIBLE
- VERSATILE
- CUTS COSTS

Are your loads long or short, narrow or wide, high or low, light or heavy? Do you want easy, low-cost handling and maneuverability in small congested areas? Whatever your needs or problems, the answer is CLARK LIFT JACKS AND SEMI-LIVE PLAT-FORMS — the modern materials handling system that gives you every time-saving, labor-saving, and money-saving advantage.

WRITE US ABOUT YOUR NEEDS

Circle No. 26 on Reader Service Card

NOLAN ONE-MAN CAR DOOR OPENER



Opens Doors in 20 seconds or less!



Many thousands in constant daily use!

Free Literature. Order one or more NOLAN Model One-Man Car Door Openers now. Catalogs on request.

The NOLAN Co., 110-C Pennsylvania St., Bowersox, Ohio

\$37.50

F.O.B. Bowersox

The Nolan Car Door Opener gives one man a tremendous amount of time-saving energy, to get the most stubborn, hard-rolling door wide open in a hurry! New chain has 2000 lbs. tensile strength. No gear, no motor, no mangaged limbs or loss of life. A few quick pulls on anchor chain gets any door open in 20 seconds. The NOLAN saves its low initial cost in first hour of operation.

New safety and efficiency features now make the Nolan 1-Man Car Door Opener more necessary labor-saving money-saving help than ever before.

NEW IDEAS

Continued

guards to the quality of products and by showing a cost reduction potential averaging well over a quarter of a million dollars annually for the past five years.

Measuring Material Handling Truck Performance

by David C. Prosser
Senior Methods and Standards Engineer
Minnesota Mining & Mfg. Co.

Selection and application of material handling trucks is "very slipshod" in industry today.

If the maximum potential of these machines is ever to be realized, the tools of scientific management that apply to them must be discovered and provided. For example, by installing material handling trucks and palletizing Minnesota Mining was able to reduce crews in its receiving warehouses from 145 men to 47 men,

but investigation showed that better use of the equipment could save an additional \$100,000 a year.

To develop a measurement tool, company engineers broke the fork truck operation down into six basic elements. Each element was measured individually and under controlled conditions, and a time value based on the measurement was assigned to each. After determining what safety and productivity rules and regulations applied to a given operation, the engineers determined how the operation was to be performed and then described the operation in terms of the six basic elements.

This description, showing the sequence of the elements, was set down in a "standard work procedure." The time required to perform the operation was determined by adding the standard time values for the various work elements required, with allowance for rest and delay. Each model and type of truck used in material handling was measured in this way, and the resulting information

Here's your answer to . . . Production HEAT TREATING of small parts

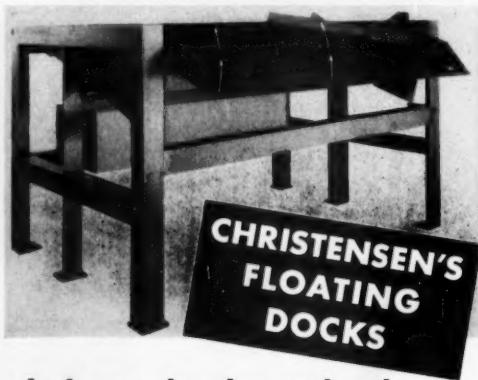


Hoff Crafters Heat Treat Baskets are designed and built to "Take It."

There's practically no limit to the variety of heat treat baskets we produce—plain steel, stainless, Monel. Let us quote on your basket design—you'll like our price—or write for details and prices on available designs.

HOFFMAN COMPANY
41-43 N. PENN ST., YORK, PA.

Circle No. 131 on Reader Service Card for more information
150



help you load or unload faster, easier, at lower cost

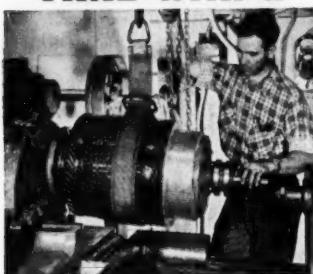
This inexpensive, self-contained unit with a capacity of 15,000 lbs., is designed for maximum safety and operating efficiency. Its up and down movement is controlled by a concrete counter balance to relieve the weight of the plate. Models are 6' x 6' and 6' x 8', include a self-contained unit which can be placed in front of the dock, and a basic model, which is less expensive, which can be placed in the dock utilizing the dock for support.

Write Today for Details of the Complete Line of Loading Ramps

Wm. Christensen Co., Inc.
DEPT. F-53 • YORK, PENNSYLVANIA

Circle No. 8 on Reader Service Card for more information
JUNE, 1953 • FLOW

**HE'S DOING
THE WORK OF
3 men
IN HALF THE
TIME with a**



GRIPPER WW* SLING

WW*-WOVEN WIRE, new all-purpose sling that's sweeping the materials handling market. Only Gripster Slings are made from **WOVEN WIRE**!

Using Gripster Woven Wire slings for handling electric motor armatures through repair steps allowed an eastern motor repair shop to cut handling time in half, use only one man where two, sometimes three, were formerly needed! You'll get equal advantages from Gripster Woven Wire slings in your plant. Use them for heavy, bulky loads, sharp edged pieces, squares, flats or long members . . . all with equal ease, speed and . . .

GREATER SAFETY

Gripster slings will not snap suddenly. Broken wires will not stick out from the sling to cut workmen's hands. No kinking, tangling, snarling.

Use Gripster slings in basket or choke hitch depending upon the type of load. Once you've tried it, it'll be the most widely used materials handling tool in your plant.

Available in standard widths and any length . . . rated and tested for any lifting job. See your mill supply, materials handling or safety equipment distributor for full information . . . or write direct for FREE ILLUSTRATED CATALOG and price list.



**The Cambridge
Wire Cloth Co.**

Dept. W • Cambridge 6, Md.



OFFICES IN PRINCIPAL INDUSTRIAL CITIES

Distributors—write for open territory data

Circle No. 5 on Reader Service Card
FLOW • JUNE, 1953

was put into a form that was catalogued for easy reference.

This measurement tool has a number of applications. It gives the manager of material handling operations a sound basis for controlling his costs. For example, measurement of material handling in a new warehouse indicated the trucks in the area were being utilized only 45 per cent of the time. By increasing utilization from 45 per cent to 90 per cent, \$30,000 a year could be saved.

I do not point out this example because I think it is unusual, I point it out because I think it is typical of the warehousing and material handling truck operations as they exist today in industry.

Wage Incentives

Application of wage incentives is one of the most popular methods today of increasing productivity, but any wage incentive application to be successful must be based on a sound and defensible measurement. Time study does not provide that measurement. This new method of measurement does.

This type of information, catalogued and put into a simplified form, could help the salesman discuss with his customers the productivity of the truck he is selling. It could help him justify the expenditure the customer would have to make for a truck and thus expand the field of use of material handling trucks. A salesman also could use it in helping his customers gain maximum utilization of the trucks they have in operation.

This tool also would offer the manufacturer of material handling trucks a basis of comparison between his truck and his competitors'. It would give him direction for future design of his trucks that would permit him to design a truck more compatible with the user's needs.

If we can provide the data from a measurement of this type for all the various types and models of trucks in a catalogue form, we will have truly provided a basic tool of scientific management for the field of material handling trucks and in turn will realize some tremendous cost reductions in applying and using powerful material handling trucks.

Towsley
INDUSTRIAL FLOOR TRUCKS
for every materials' handling purpose



"All Welded" steel construction, light weight hand truck for case goods. Pin type for easy one-hand operation, twin type for two-hand operation is essential to safety and efficiency.



No. 452

"All Welded" steel construction bagged goods and baggage truck. Folding bow greatly increases load carrying capacity without reducing mobility.



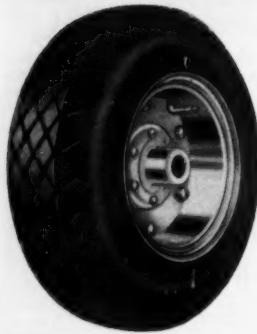
TOWSLEY TRUCKS, Inc.

176 Elmwood Street, Cincinnati 23, Ohio

Circle No. 150 on Reader Service Card
151

**SEE THEM
COMPARE THEM
AND YOU'LL BUY 'EM**

MADE TO TIRE AND RIM
ASSOCIATION STANDARDS



Geneva
"ROLL CHIEF"
SUPER WIDTH RIM
DISC WHEEL WITH WIDE TREAD
AND CROSS SECTION PNEUMATIC
TIRES AND TUBES

These wheels are another Geneva "FIRST". They are furnished in tire diameters 8", 10", 12", 14", 16, and 18". The wheels are available with choice of hub lengths and bearing types for various spindle sizes, making these interchangeable on your present spindle. They carry great loads easier,—more flotation,—cushioning and longer life.

SEND FOR LITERATURE NOW!

GENEVA METAL WHEEL COMPANY
502 Railroad Street, Geneva, Ohio

Gentlemen:

Please send us literature outlining the superiority of Super Width Rim Disc Wheels.

COMPANY _____

NAME _____

ADDRESS _____

GENEVA METAL WHEEL CO.
502 RAILROAD STREET
GENEVA, OHIO, U.S.A.

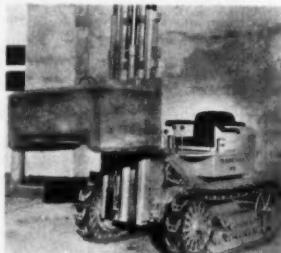
Circle No. 104 on Reader Service Card
152

SHOW ADDENDA

(Continued from page 88)

Crawler Fork Truck

Terra-lift, a crawler fork-lift designed to accommodate material



handling requirements for moving big loads both indoors and outdoors in any weather and on any type of terrain.

American Tractor Corp.

"Fork Truck of Future"

Clark X-70, which is still in the



development stage, and for which visitors were asked to answer questions regarding individual features.

Clark Equipment Company

Loading Platform

Automatic loading platform for



handling loads between truck floor and loading dock.

Field Engineering Co.

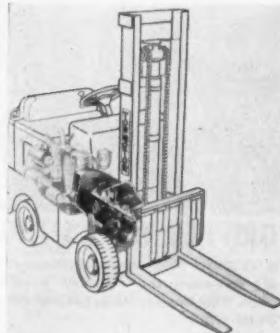
Handling Aids

Three handling aids were exhibited. They were: 1. the Press-Welds, a light-duty caster; 2. a gas-powered lift truck called the Handler; 3. a redesigned version of the mechanical Liftable.

Service Caster & Truck Corp.

Fork Trucks

The first Towlmotor Lift Trucks to employ Diesel power: basic refinements in the regular series of



large-type fork lift trucks; power steering for the company's line of trucks; torque drive for Towlmotor Fork Lift Trucks, called Tomotorque Drive.

Towlmotor Corp.

Outdoor Fork Truck

Model 40 Truck-Man fork truck designed for efficient use in outdoor storage yards as well as transporting and stacking inside the



plant. The front, or drive, wheels are equipped with 7.50 x 16 Road Lug pneumatic tires to insure ample traction on soft ground, while the rear wheels have 6.00 x 9 industrial rib pneumatics for increased footing.

Truck-Man Division,
The Knickerbocker Company

NEW PRODUCTS

(Continued from page 42)

Special Differential

Towmotor Corporation announces the availability of a special differential which is designed to give full power to both drive wheels under any operating conditions. Called the "NoSPIN" differential, it also compensates for differences in wheel speeds when turning in either direction. It is offered as original equipment at additional cost on Towmotor LT-60 lift trucks, and is also interchangeable with the standard LT-60 differential.

Circle 210 on Reader Service Card for more information

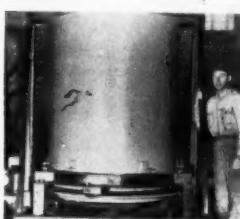
Speed Reducers

Designed for use as a conveyor drive, this worm gear speed reducer is manufactured by Philadelphia Gear Works. It incorporates an automatic and instantaneous shut-off device for overload protection. This feature eliminates the need for a shear-pin coupling. When a predetermined load limit is reached, motor current is cut off by direct mechanical action of the overload. To restart operation, only removal of the excessive load is necessary. A wide range of horsepower and ratios from $3\frac{1}{2}$ to 1 up to 6300 to 1 are available.

Circle 211 on Reader Service Card for more information

Combination Bin-Feeder

Here is a combination bin and feeder manufactured by Pulva Corporation. It is said to be ideal for continuous feeding of sticky, mastic materials. The bin or cylinder is mounted concentrically on the same shaft on which the rotary discharge plate is also mounted. Consequently, the cylinder turns with the discharge plate. A stationary plow extends through the gap provided between the top



FLOW • JUNE, 1953



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Circle 210 on Reader Service Card for more information

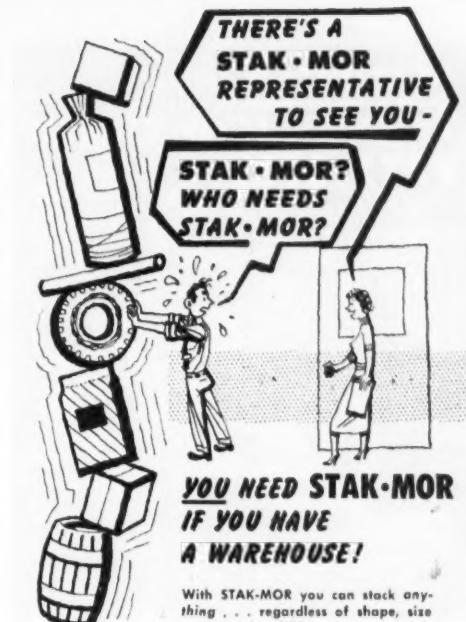


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Circle 211 on Reader Service Card for more information

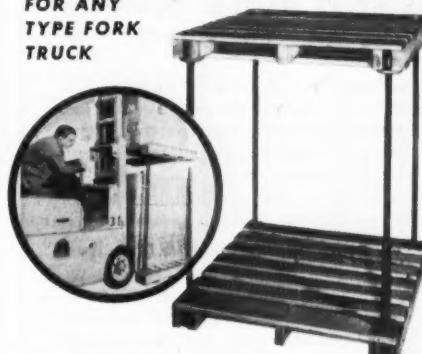
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With STAK-MOR you can stack anything . . . regardless of shape, size and weight AND reduce materials handling time by $\frac{1}{2}$ and increase storage space up to 200%!

FOR ANY
TYPE FORK
TRUCK



COMPLETELY ASSEMBLED
WITH ALL HARDWARE—

Custom-made STAK-MOR stacking pallets are shipped completely assembled with all necessary hardware. You merely insert the vertical posts in their sockets and "you're in business".

For complete information, send card or letter . . . no obligation of course. If you have an earnest desire to save substantial sums by decreasing labor costs and increasing available storage space — you need STAK-MOR!

WRITE FOR BULLETIN NUMBER 35

STAK-MOR Sales Co.

1931 OLIVE STREET
ST. LOUIS 3, MISSOURI

Circle No. 78 on Reader Service Card for more information



CHIP-TOTE... **ELIMINATES MACHINE DOWN-TIME** **AT THOMPSON PRODUCTS, INC.**

Machines produce more when **MAY-FRAN CHIP-TOTES** permit continuous operation. **CHIP-TOTE** automatic scrap conveyors remove borings, turnings and chips from high-production machine tools while they are operating . . . thus eliminating shut-down for manual scrap removal.

At Thompson Products, Inc., Cleveland Plant, **CHIP-TOTES** speed production by continuously conveying the large volume of chips generated by Sundstrand automatic lathes from machine to tote boxes. Operating speed of the **CHIP-TOTES** is synchronized with metal removing capacity of lathes to assure steady jam-free flow of scrap. In addition, the **CHIP-TOTES** provide for drainage and return of coolant.

Write today for the new
CHIP-TOTE Bulletin MF-640

1104-MF



MAY-FRAN
ENGINEERING, INC.

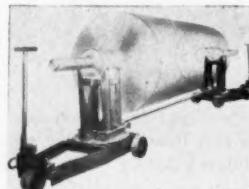
1691 Clarkstone Road Cleveland 12, Ohio
Circle No. 108 on Reader Service Card for more information
154

of the discharge plate and the bottom of the cylinder. The plow reaches into the mass of material and, as the cylinder turns, the material is plowed out through the gap and over the edge of the discharge plate. It is available in a wide range of sizes—from smaller units with discharge rates of grams per minute to large units capable of discharging at rates of 100 tons or more per hour.

Circle 212 on Reader Service Card for more information

Roll Handling Truck

This specially-designed floor truck for beam or roll handling was built by Lewis-Shepard Products, Inc. The particular unit shown here was made for heavy duty loads up to 15,000 pounds, and is suited for a variety of applications. Hardwood V-blocks are mounted on dual steel turntables which are connected at their base by a tubular member so that the load is kept in line for straight and corner traction. The V-block prevents any damage to rolls. By varying the length of tubular connecting rod, turntable dollies can accommodate various length rolls or beams.



Circle 213 on Reader Service Card for more information

DEPENDABLE **STURDY**

MIDWEST **SCAFFOLDING** **CASTERS**

Midwest Scaffolding Casters meet all the requirements for ruggedness, safety and dependability. Built for heavy duty service with drop-forged steel top and yoke plates. Double ball-bearing races. Lubrication through grease fittings. Moldon rubber tires.

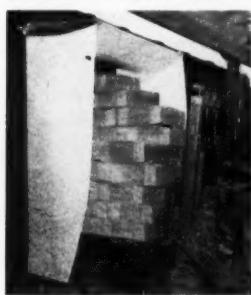
Write for Complete Information Today



MIDWEST PRECISION CORPORATION
HILSDALE & STOCK — JACKSON, MICHIGAN
Circle No. 83 on Reader Service Card for more information
JUNE, 1953 • FLOW

Weather Screen

Shown here is the Elwing weather screen, a protective canopy which is attached to any standard boxcar door and extends under the roof of a shipping platform or into a warehouse door. Among the claims made for this screen are: weatherproof product protection, better working conditions, safe trucking operations on dry dockboards, less heat loss in heated



buildings, full utilization of operating area and elimination of claims, delays and demurrage due to inclement weather. It is furnished in standard width of 6 feet, and in standard canopy extensions of 38 inches, 50 inches and 62 inches beyond the car door opening. Manufacturer is The Elwing Corporation.

Circle 214 on Reader Service Card for more information

Stair Climber Truck

For the ascension and descension of stairs, curbs and multi-level passageways, Automatic Bending Company announces the E-Z Climb two wheel utility hand truck. The two aluminum rocker shoes act like an extra pair of wheels in keeping the load supported until the wheels reach the next level.

At this point, the wheels engage the new level after which the complete cycle is repeated until the final elevation is reached. The truck is available with both steel and aluminum frames with a variety of wheel diameters featuring both semi-pneumatic and pneumatic tires.

Circle 215 on Reader Service Card for more information

Aluminum Conveyor

Shown here is an aluminum gravity wheel portable conveyor manufactured by Speedways Conveyors, Inc. Designed for strength and easy handling, every part of this conveyor, except wheels and axles, is made of a resilient aluminum alloy. It has a $2\frac{1}{2}$ by 1 channel and rigid bolt construction. Its capacity is equal to that of Speedways steel



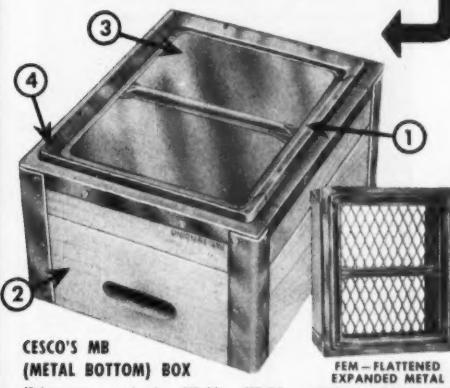
flow • JUNE, 1953

Cesco's TOTE-SHOP BOXES

... Do Your Job • EFFICIENTLY • EASILY • ECONOMICALLY

ON CONVEYORS, PALLETS, HAND TRUCKS,
SKID PLATFORMS, OR WHAT HAVE YOU

1. Heavy Duty Strut . . . Prevents Sag . . . Permits Bottom Flex . . . Distributes shock.
2. High Grade Hard Wood Lumber .
3. (FM) Flat Metal Bottom . . . likewise available in open type bottoms FEM-FPM-WM illustrated below.
4. Specially designed "Bottom Stacking Runner" . . . One piece . . . Rounded Corners (No Mitered Joints — No Distortion).



CESCO'S MB (METAL BOTTOM) BOX

(Prices net - per box)	MB-20	MB-24
Lots of 2000	\$2.65	\$3.00
1000 - 1999	2.67	3.02
500 - 999	2.69	3.04
250 - 499	2.74	3.09
100 - 249	2.79	3.14

2 STANDARD SIZES

MB-20: $14\frac{1}{2}$ " x $11\frac{3}{4}$ " x $9\frac{3}{4}$ "
MB-24: $17\frac{1}{2}$ " x $11\frac{3}{4}$ " x $9\frac{3}{4}$ "

F. O. B. Northampton, Mass.

CESCO'S WB (WOOD BOTTOM) BOX

Depending upon the material packed and the handling method stock sizes will accommodate loads up to 200 lbs.; possibly greater.

- Ruggedly constructed . . . steel reinforcing features of zinc coated prime stock . . . Self Stacking . . . convenient hand holes
- Binding rivets PLUS corner lock style yields maximum rigidity

Write today for quotations on special sizes . . . Please submit specifications.

CESCO'S WB (WOOD BOTTOM) BOX

(Prices Net - per box)	WB-1	WB-2	WB-3
Lots of 2000	\$1.80	\$2.05	\$2.20
1000-1999	1.82	2.07	2.22
500-999	1.84	2.09	2.24
250-499	1.89	2.14	2.29
100-249	1.94	2.19	2.34

No. 1 size — (I.D.) — $14\frac{1}{2}$ " x $11\frac{3}{4}$ " x $9\frac{3}{4}$ "
No. 2 size — (I.D.) — 18" x $11\frac{3}{4}$ " x $9\frac{3}{4}$ "
No. 3 size — (I.D.) — 20" x $11\frac{3}{4}$ " x $9\frac{3}{4}$ "

F. O. B. Northampton, Mass.

CESCO CONTAINER CO.

475 Fifth Avenue
New York 17, N. Y.
Factory: Northampton, Mass.

Circle No. 7 on Reader Service Card for more information

Well Stacked!

That's for sure—if it's stacked on strong square tubular EMI racks. They are designed not only to save floor space through claiming of "air rights," but to do it as efficiently as possible. EMI designs provide for safe, easy stacking and assembly.

Let our rack specialists assist you in planning your new system to incorporate the economies of unit load handling in production and storage, regardless of the type material or products involved.



Write
for our
catalog

EQUIPMENT
MFG. INC.

21552 HOOVER ROAD, DETROIT 6, MICHIGAN

Circle No. 12 on Reader Service Card for more information
156

conveyor and it is available in the same standard widths. The conveyor is one-third lighter than the steel models made by the company.

Circle 216 on Reader Service Card for more information

Magnesium Hand Truck

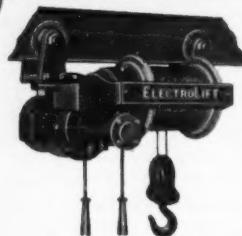
Magnesium Company of America announces the addition of a magnesium hand truck to its line of magnesium material handling equipment. Shown here, the hand truck weighs 18 pounds, but its capacity is more than 500 pounds. The manufacturer claims it weighs one-fourth to one-third that of hand trucks made of other materials with comparable capacities.



Its all-bolted construction is said to enable easy replacement of parts. It is claimed to be ideally suited for use on beverage and other delivery trucks and for general factory, warehouse and loading dock use.

Circle 217 on Reader Service Card for more information

10 advantages of ELECTROLIFT WORM DRIVE HOIST



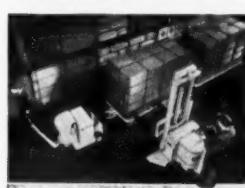
- automatic electric brake
- hoist drum fully grooved
- motor hoist fully enclosed
- automatic lubrication
- hoist gearing fully enclosed
- worm shaft alloy steel
- worm load brake holds load
- drum guards protect cable
- no overhung gears
- optional pushbutton control

ELECTROLIFT
Worm Drive Hoist

ElectroLift, Inc., 30 Church St., New York 7, N. Y.
Circle No. 41 on Reader Service Card for more information
JUNE, 1953 • FLOW

Truck-Tractor Team

When they work as a team, this lift truck and tractor are said to greatly cut handling costs. Trailers are loaded at the dock, and the tractor then pulls one to six of these to the storage area and leaves them. The truck picks the palletized loads from the trailers and stacks them. The tractor returns with another string of loaded trailers for



tiering and picks up the empties for return to the dock. The units have two speeds forward and two in reverse, plus brakes, and the button controls operate with the handle in any position. Driving wheels and the steering column are supported on opposed timken bearings for permanent alignment and ease of steering. The manufacturer is Lift Trucks, Inc.

Circle 218 on Reader Service Card for more information

Plate Magnets

A redesigned line of permanent plate magnets for removing tramp iron from material carried in chutes, ducts or on belts is now available in a complete range of sizes. They are constructed of

New Pallet Dollies that STEER Easy

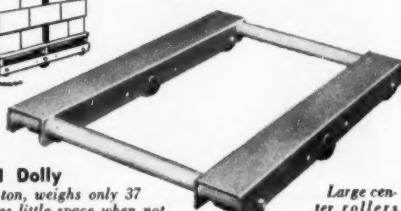
Steers like a two-wheel cart



OLSON

No. 704-1 Dolly

—carries a ton, weighs only 37 lbs. Requires little space when not in use. Costs so little, every factory, warehouse, shipping, receiving and transport department should be completely equipped. Send for Bulletin.



Large center rollers carry most of the load for easy steering. Smaller rollers at ends act as stabilizers.

SAMUEL OLSON MFG. CO., INC.

2426 Bloomingdale Ave., Chicago 47, Ill.



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FLOW • JUNE, 1953

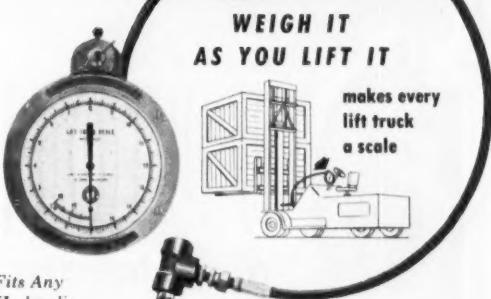
**you may use the
MARTIN-DECKER lift truck scale**

FREE 15 DAYS

If for any reason you are not entirely satisfied with it just return the scale to us parcel post prepaid and we will promptly refund your money provided the scale has not been damaged

**WEIGH IT
AS YOU LIFT IT**

makes every
lift truck
a scale



Fits Any
Hydraulic
Cylinder Type
Lift Truck

THE MARTIN-DECKER LIFT TRUCK SCALE

- Enables Fork Truck Driver to totalize highway truck or railroad car loadings
- Prevents highway overload citations
 - Insures a pay load every time
 - Ideal for testing truck ratings
 - Permits floor weight distribution
- Prevents elevator overloads
 - Safeguards equipment and life
 - Reduces accidents

The time and equipment savings will quickly pay for the MARTIN-DECKER Lift Truck Scale

ACT NOW!

Please send literature on Martin-Decker Lift Truck Scale.
 Have local representative call for an appointment.

Name _____

Title _____

Company _____

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MARTIN HOME OF THE WEIGHT INDICATOR **DECKER CORP.**
LONG BEACH, CALIFORNIA

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...LOWEST PRICE
OF ANY CRANE SCALE ON MARKET TODAY!

combine weighing
with moving in
ONE operation

...DEPENDABLE ACCURACY
CALIBRATED WITH CERTIFIED DEAD WEIGHTS

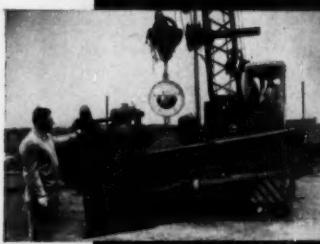
the
DILLON
Weight Indicator

Precision Ground Knife Edges and
Pivots . . . the Universal
"Standard of Accuracy"
Accurate within one division of indicated reading

CAPACITIES:
0-250 lbs.
0-500 lbs.
0-1000 lbs.
0-2500 lbs.
0-5000 lbs.

Hundreds of plants are using the Dillon Weight Indicator to eliminate separate weighing operations — to weigh materials of all types while moving, inventorying, shipping or receiving — making ONE operation instead of two.

And with the DILLON you are assured of both extreme ruggedness as well as accuracy. (Calibrated with Certified dead weights.) Completely mechanical in operation, it contains no sluggish liquid to leak, and it is unaffected by even a wide range of temperature variation — retains its dependable accuracy day in and day out! Simple, patented construction permits low cost plus the ability to withstand long, hard usage. Compact. Easily handled by one man.



2½ tons of scrap machinery being weighed by a Dillon Scale prior to loading and disposal

Write Today for Illustrated Catalog

W. C. DILLON & CO., Inc.

146209 KESWICK ST., VAN NUYS, (Suburb of Los Angeles) CALIF.
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larger Alnico blocs which are said to increase their magnetic strength by as much as 50 percent. The line is manufactured by Dings Magnetic Separator Company.

Circle 219 on Reader Service Card for more information

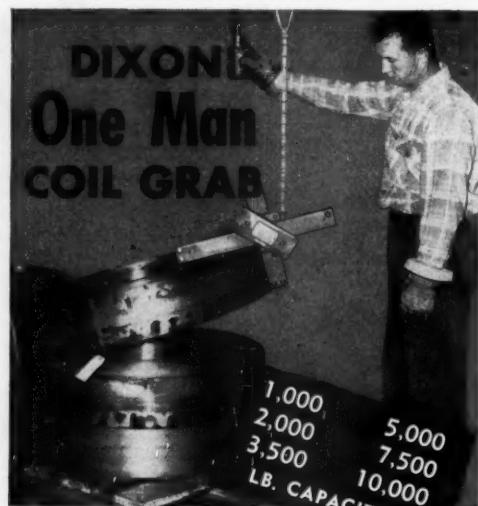
Caster Without King Bolt

Shown here is a swivel caster that does not require a king bolt. Manufactured by Lansing Company, its design principle employs a swivel plate floating within a bearing assembly that carries both radial and thrust loads. The manufacturer claims it affords, in addition to longer life and reduced maintenance, greater swiveling freedom under heavy loads and greater resistance to shock. Another feature is its waterproof swivel. Longer life is guaranteed because moisture (even if completely immersed) and other foreign matter are effectively excluded from the swivel bearing by means of a special seal that also acts as a grease retainer.



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DIXON
One Man
COIL GRAB



1,000, 2,000, 3,500, 5,000, 7,500, 10,000
LB. CAPACITIES

**Automatically
ADJUSTS TO COIL SIZE**

Seven standard models available to handle coils from 1" to 48" wide.

Export Dept.: 306 W. Washington Blvd., Chicago 6, Ill.

DIXON Automatic Tool, Inc.

2304 23rd Ave. • ROCKFORD, ILLINOIS
Circle No. 10 on Reader Service Card for more information
JUNE, 1953 • FLOW

Revolutionary "Tire"

Goodyear Tire & Rubber Company announces an extremely low-pressure "tire" which is revolutionary in principle, shape, construction and use. The "tires", designated as "Rolligons" by the inventor, William H. Albee, are soft and flat like a watermelon-shaped balloon. They support the load of the vehicle and allow it to roll along over the surface of the ground. Of extremely low pressure, they permit the vehicle on which they are mounted to operate without springs over sand and on soft ground and over obstructions and rugged terrain.

Circle 221 on Reader Service Card for more information

Radio Controlled Trucks

Shown here is a Barrett-Cravens Company Tractor Ox which is guided by radio remote control. This radio remote control is also available

for the Barrett Power Ox and the Pallet Ox. When the operator wants to move a trailer train to another location to pick up stock, he moves it by means of the control unit attached to his belt without going to the tractor. He can move the train for-



Lift HEAVIER Loads HIGHER the SAFE WAY

NEW Safeway ELECTRIC FORK LIFT TRUCKS

- 3 sizes offer 68", 80", or 100" lifting heights—rated at 1250 lbs. lift.
- Powerful hydraulic system activated by auto-type battery. Built-in charger with automatic cut-off, trickle charge.
- Electronic switch cuts off power at maximum height—prevents jarring load, damage to hydraulic system.
- Touch control—PUSH to lift, RELEASE to hold, FULL to lower at any speed.
- Safety hand-operated brakes prevent movement when loading or unloading, provide positive control on inclines.
- Ruggedly built, easily maneuvered, for long life, efficient one man operation. Load, unload, stack or move materials faster, easier, more safely.

"Snap on" Platform a plus feature
Write for Complete Details

Safeway INDUSTRIAL EQUIPMENT CORP.
184 N. FRANKLIN ST.
CHICAGO 6, ILLINOIS

**BIG VALUE
LOW COST**

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FLOW • JUNE, 1953



Speed Production of Cotton Seed Oil

- Variable Control
- Less Troubleshooting
- Low Cost



Low cost, finger-tip controlled feeding of hard-to-handle bulk materials makes Syntron Vibratory Feeders the logical choice of Cotton Seed Oil Producers.

Syntron's Vibra-flow design almost completely eliminates trough abrasion—reduces dust problem of dry materials. Electromagnetic operation assures a smooth, even flow of heavy lumps or fine powders—wet or dry.

Write today for complete Catalogue data—Free

SYNTRON COMPANY
445 Lexington Ave.
Homer City, Pa.

Circle No. 136 on Reader Service Card for more information

How much do you weigh?

Not you, but your products! Do you weigh in receiving, at production stages, etc. to protect your operation against overcharges, losses, miscalculations? HYDROSCALE, the hydraulic crane scale, makes it practical to check whenever and wherever you should, weighs on the spot, eliminates weighing stations and man power and equipment tie-ups.

36 MODELS,
500 to
200,000.
LBS.

HYDROSCALE

reduces the
effort and
expense
associated with
routine weighing
jobs

— Weigh in —
Receiving
Production
Batching
Inventory
Testing
Shipping
Write for our catalog

HYDROWAY SCALES, INC.

20428 W. 8 Mile Rd., P.O. Box 4754 Detroit 19, Mich.

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160

ward, backward and around corners. The distance of the operator from the drive unit of the truck is limited only by his range of vision. The operator also can ride the tractor and operate it in the conventional manner, without using radio control.

Circle 223 on Reader Service Card for more information

Eliminates Eye Strain

Attach this light intensifier to any 25, 50 or 100 watt bulb and direct the powerful concentrated beam where the worker needs it most, and you will have three times the light on that given spot, according to the manufacturer, Light Intensifier Co. The unique magnifying accessory is said to be ideal for close industrial work where ordinary overhead lighting is insufficient. They are said to accomplish the same results as a spotlight at only a fraction of the cost.



Circle 224 on Reader Service Card for more information

In production or in storage IRONBOUND EQUIPMENT HANDLES SMALL PARTS MORE EFFICIENTLY



Standard 2-way entry bolted type skid
built to handle loads up to 5 tons.



Standard box top welded to standard
skid. Available too, with removable
boxes. Handles many items in produc-
tion and storage.



Flexible arrangement of
boxes and skids permits
tiering and stacking to
meet your individual re-
quirements. Provides quick
availability, easy han-
dling, or storage for com-
plete units or parts.

Each of the units illustrated has an important use in modern industry. Ironbound skid platforms and box tops are prime sources of increased plant capacity so vitally needed today. Our representative can help you to increase your output and plant space. Catalog GP-7 may help you, too!



IRONBOUND

BOX & LUMBER COMPANY
Materials Handling Division

30 HOFFMAN PLACE • HILLSIDE, N. J.

MANUFACTURERS OF QUALITY BUILT SKIDS, SEMI-LIVE SKIDS, FLOOR TRUCKS, ROLL TRUCKS, DOLLIES AND PRY BARS

Circle No. 17 on Reader Service Card for more information

JUNE, 1953 • FLOW

Swivel Casters

The Fairbanks Company has announced a Series "27" steel swivel caster. Available in sizes of 6, 8 and 10 inches, the casters are double race swivel of heavy steel plate welded construction. The outer ball race is precision machined with provision for pressure lubrication and, combined with a Timken thrust bearing, is designed to relieve the load on the countersunk king bolt, is

said to insure easy swiveling under heavy loads. The caster is standard with a replaceable bolt axle. It is available with semi-steel roller bearing wheels and molded plastic wheels in the 6-inch size and with semi-steel roller bearing wheels, vulcanized rubber-tired roller bearing wheels and molded plastic wheels in the 8- and 10-inch sizes. Circle 225 on Reader Service Card for more information

Steel Parts Pans

Steel parts pans manufactured by A. O. Pfister Company are drawn from one piece of heavy-

GRAND
FORK LIFT
HAND TRUCK
with VARILIFT

Electric Lift Stacker
Model 7158

... the 4-Speed
Hydraulic System
that Fits Lifting
Speed to Load

The new Grand Lift Stacker is a man-saving hand truck which moves and lifts heavy loads smoothly and safely. For warehouse stacking, for loading and unloading trucks, for handling boxes, barrels, dies, totepans and hundreds of similar loads, the Lift Stacker is Industry's most useful tool!

Lift Stackers are compact, easy rolling and may be used on low load limit floors. The sensational new Varilift speeds up handling of light loads and unloading operations by as much as 400%.

40 Grand models are available to meet practically any hand truck requirement with capacities up to 3000 lbs. and lifting heights to 98 inches in either manual or electric hydraulic lift types.

Your Grand distributor will gladly demonstrate in your plant.

Write or wire for complete information.



ALLIED MFG. & SALES CO.
201 N. WELLS ST. • CHICAGO 6, ILL.

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FLOW • JUNE, 1953

**NEW
LOW
PRICE
ON**

NESTIER

*means greater
savings than ever!*

Increased sales and production of NesTiers enable us to offer you these remarkably efficient materials handling containers at a new low price you can't afford to ignore.

Even at their former price, NesTiers have been a major economy factor in every type of manufacturing plant. Now, with initial cost reduced, their savings potential is greater than ever before!

**IT NESTS
IT TIERS**



REMEMBER —

NesTiers are the standard shop boxes that do every small parts handling job—adapt perfectly to all methods of transportation—eliminate need for changing containers when dipping or degreasing!

**THE CHAS. WM. DOEPKE
MANUFACTURING CO., Inc.**
Metal Specialties Division
ROSSMOYNE, OHIO



WRITE NOW FOR FREE
DESCRIPTIVE CATALOG

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161

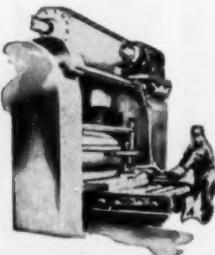
MAGNESIUM PLATE



SAVE WORKER-FATIGUE and HANDLING COSTS

on implant materials being lifted or carried. **SUBSTITUTE MAGNESIUM PLATE** for heavier metals and for wood. **THIS STEPS UP PRODUCTION**—often very substantially.

NEW LOW PRICE on commercial Magnesium Plate from B&P competes on a square foot basis with aluminum. This plate is strong; it is easily sawed, drilled, formed, and welded.



LET US SEND YOU FACTS AND FIGURES

Mention the application you have in mind, and B&P engineers can be helpful. Write us on your letterhead, please.

BROOKS and PERKINS INCORPORATED

Pioneer Magnesium Fabricators; Plate and Sheet Rolled from Magnesium Ingot

1944 W. FORT ST., DETROIT 16, MICHIGAN

Circle No. 138 on Reader Service Card for more information
162

gauge cold-rolled steel. Since they are seamless, the pans are leakproof and can be used for machine shop parts handling to avoid lubricant dripping.

Circle 226 on Reader Service Card for more information

Hydraulic Table

This 1-ton hydraulic utility table has been designed as a versatile time and money saver for a variety of shop operations. Manufactured by Rack Hydraulic Equipment Corporation, the unit has a heavy duty, 24 by 35 inch work top formed from a single piece of reinforced steel plate. It rotates a full 360 degrees and can be raised or lowered in locked or unlocked position. Elevation is 16 inches. Two-speed foot pump which permits faster raising of lighter loads, is standard equipment. Base of the table measures 24 by 35 inches. It has a lowered height of 28 inches and an elevated height of 44 inches.



Circle 227 on Reader Service Card for more information

Save time! Prevent accidents!

UFT AND DUMP MECHANICALLY

BAGS
BARRELS
DRUMS
BOXES

REDUCE HANDLING COSTS with a Cesco Dumper. It handles up to 100 loads per hour; has a lifting cap. ranging from 100 to 1500 lbs. Both single- and multi-purpose portable models are built in standard dumping heights from 5 to 12 ft. Stationary models up to 16 ft. dumping heights. Push button controlled. Write for catalog.

ESSEX CONVEYOR, INC.
101 Golden Street • Newark, New Jersey
COLSON EQUIPMENT & SUPPLY CO.
1317 Willow Street • Los Angeles 13, California



Circle No. 63 on Reader Service Card for more information
JUNE, 1953 • FLOW

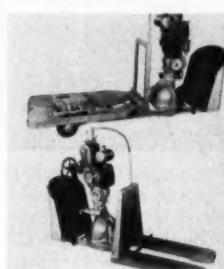
Vibrating Screen

A vibrating screen for the sizing and processing of ore, coal, chemicals, grain, rock and other bulk materials has been developed by Hewitt-Robins Incorporated. The screen will handle heavier loads than previous models. It is equipped with a heavier yoke and it is mounted on coil springs instead of leaf springs formerly used. All units will have 3-inch discharge lips. Single and double deck models will be available.

Circle 228 on Reader Service Card for more information

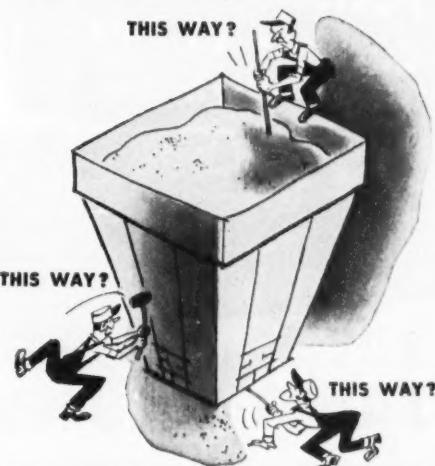
Power Lift Models

Truck-Man division of The Knickerbocker Company has announced an automatic hydraulic power lift available on all skid and pallet low lift trucks. A hydraulic pump is installed directly on the engine and transmits a pressure up to 1000 psi through a 360-degree swivel elbow fitting and flexible tube to the cylinder. The fitting is a type which has



proven satisfactory on high speed presses and

How do you keep stuff flowing from bins?



Do it the new way with PNEUBIN

Delays . . . dangers . . . damage and din . . . PneuBin does away with them all! Pulsating neoprene panels, mounted inside the walls, keep stubborn materials flowing from any type of bin or hopper. They work noiselessly, by positive displacement . . . move the contents, not the bin.

PneuBin can solve your toughest bin-flow problem . . . without the hazard of prodding from above or below, the damage inflicted by hammer blows or vibration, the fatigue caused by shattering noise. PneuBin's efficiency, dependability and economy, proved in many leading plants, will be a boon to yours.

Write for "Flow Stoppage Report" form . . . no obligation.

GEROTOR MAY CORP., Baltimore 3, Md.



by the manufacturers of

GEROTOR
HYDRAULIC PUMPS & MOTORS

**ECONOMICAL WAY
TO CUT YOUR
SWEEPING
COSTS**

**FITS ALL
FORK
TRUCKS**

**YARD
FORK TRUCK**  **BIRD
SWEEPER**

- From handling materials to sweeping in 5 minutes.
- One man replaces sweeping crew . . . does faster, more thorough job.
- Cleans away snow, dust, debris . . . up to 100,000 sq. ft. per hr.
- Costs far less than conventional units.
- Sprinkles while it sweeps.
- Side brush optional.

Hundreds in successful use by Railways, Factories, Foundries, Docks, Warehouses, Airports, etc. Floating dust pan quickly, easily emptied into any height receptacle . . . no rehandling. No other sweeper can do this!

WRITE

LITTLE GIANT PRODUCTS, Inc. 1536 North Adams St., PRORIA, ILLINOIS

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FLOW • JUNE, 1953

Circle No. 44 on Reader Service Card for more information
163

Position Freight
Carriers To Any
Level With

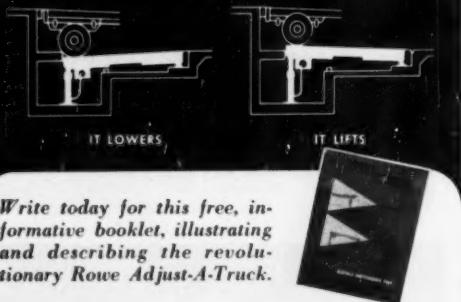


ROWE ADJUST-A-TRUCKS

Now, When You Can't Adjust Your Docks,
You Can Adjust Your Trucks

Here is the answer to the problem shared by many companies who do not have room on their docks or in front of their docks to install adjustable dock ramps. Now, Rowe Methods, Inc., manufacturer of the world famous Adjust-A-Dock, brings you its ADJUST-A-TRUCK, which brings any vehicle to dock height. Here is a unit that is set into the pavement in front of the dock and by means of a heavy-duty electric hydraulic system to adjust each vehicle to dock height; its capacity, 40,000 lbs.

Here's How It Works



Write today for this free, informative booklet, illustrating and describing the revolutionary Rowe Adjust-A-Truck.

ROWE METHODS, INC.

2534-C Detroit Ave.

Cleveland 13, Ohio

Circle No. 151 on Reader Service Card for more information
768

many similar heavy duty machines, permitting full 360-degree rotation of the driving and steering power turret.

Circle 229 on Reader Service Card for more information

Versatile Shop Truck

This shop truck is a hydraulically-operated unit that handles all lifting jobs within its capacity, whether they require a boom, forks or platform. The boom makes possible lifting to 8 feet. The forks need only 3 1/4 inches clearance and will lift a pallet to 55 inches. To lift non-palletized loads, a platform is locked over the forks. Loads of 750 pounds may be lifted by the one-hand operation of a 5000-pound hydraulic system. To make it easy to handle in close quarters, the base is only 22 1/2 inches by 33 inches, and it has a foot-operated lock brake. Manufacturer is Unit Manufacturing Company.



Circle 230 on Reader Service Card for more information

THE "Easy-tote" TRADE MARK REGISTERED DEPARTMENTAL TRUCK

USERS LIKE THEM . . . 75% REORDER

75% of users reorder . . . proof of the lower cost, easier handling Easy-totes provide on countless, small, important jobs. Large and small plants use this all-purpose truck to out-maneuver and out-perform conventional hand trucks. There's nothing else like it. Three wheel arrangement, swivel caster in rear, low tilting baseplate (16" x 22"), adjustable hook and crank permit one man to handle loads up to 400 lbs. quickly, without lifting injuries. No need to "muscle the load" . . . see 1-2-3 below. See this proven equipment . . . give Easy-tote a trial run . . . order one today—only \$28.00. Send for further information.

THE EASY-TOTE PRODUCTS CO.
P. O. Box 86 Buffalo 17, N. Y.



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JUNE, 1953 • FLOW

All-Welded Wheel

A series of all-welded, pressed steel wheels has been announced by Goddeyne Wheel Products.



According to the manufacturer, the series will round out the company's existing line of bolted-construction wheels, and provide a low-cost industrial wheel for use where tire changeability or specific load requirements are not a major consideration. Manufactured in 6,

8, 10 and 12 inch sizes, the wheel is of welded construction throughout, and is available with either ball or oilite sleeve bearings. Choice of semi-pneumatic or solid rubber tires is optional.

Circle 231 on Reader Service Card for more information

Hydraulic Loader

Designed to speed bulk material handling for industrial plants, lumber yards and similar commercial operations, the Baker-Lull Corporation's



Shovelader is a multi-use hydraulic loader available with eight accessory attachments. Available in six models (rated by capacity, dumping height and forward reach) it is mounted on four national makes of industrial tractors: Case, Minneapolis-Moline, Shepherd and Oliver. Basic attachment is a material bucket, designed for material loading and unloading. Others include a combination coal and snow bucket, bulldozer, lifting crane, sweeper, rear leveling blade scarifier and logging fork.

Circle 232 on Reader Service Card for more information

Tractor Loader

A line of hydraulic tractor loaders which features a torque converter drive to front wheels with rear axle power steer has been announced



by The Jaeger Machine Company. Shown here is the 1 cubic yard model which combines a static load capacity of 5000 pounds with

ability to turn in a 14-foot radius, hoist its bucket from the ground to 8 feet, 2 inches dumping clearance in 9 seconds and travel at speeds to 18.7 mph forward and 28.2 mph in reverse. The torque con-

BELT PORTABLE CONVEYORS

MOVE BOXES, BAGS + BULK

PUT THRIFT IN EVERY MATERIAL SHIFT



MODEL R VERSAVEYOR BAG AND BOX HANDLER

Here Versaveyor feeds a gravity conveyor, saves time and manpower stacking and storing. Guide rails, floor-to-floor stands and other accessories available to fit this versatile unit to many cost-cutting jobs in your operation.



MODEL TL VERSAVEYOR

Slashes handling time, speeds truck turnaround. Can also work horizontally carrying loads back into trailers. Stands upright when not in use.

MODEL S HANDY-HANDLER

Lightweight, multi-purpose conveyor for handling coal, salt, sawdust, feed and similar bulk materials.

Write for free literature on any of the above conveyors or outline your special handling problem and we'll forward additional information.

THE BELT CORPORATION

7206 STAHL ROAD

ORIENT, OHIO

Circle No. 59 on Reader Service Card for more information

Circle No. 122 on Reader Service Card for more information

- NEW
- INEXPENSIVE
- EASY TO MOVE

FLEXO-CRANE



ABELL-HOWE CO.
1 TON CAP.

For Handling of Loads Up to One Ton

If real economy, safety and ease of operation are of interest to you, check into Abell-Howe's new FLEXO-CRANE. You can buy it complete with hoist and other accessories or assemble it yourself from a FLEXO-CRANE "kit".

Bulletin F-120
Gives You All the Details
Write for It Now

ABELL-HOWE CO.

53 W. JACKSON BLVD.
CHICAGO 4, ILLINOIS

Better Floors with Cryptolite Wonder Mineral



Better floors and faster production result from the use of SWIFT-FLOOR with the new wonder mineral Cryptolite, according to The Monroe Company, Inc., Cleveland.

Cryptolite is a many-sided prismatic crystalline material which is employed exclusively in SWIFT-FLOOR patching and floor resurfacing

compound. Its multitudinous irregular surfaces bind the flooring compound into a material of amazing density and strength. Cryptolite produces floors that are harder, tougher and possess greater cohesion and better adhesion to surfaces on which SWIFT-FLOOR is applied.

SWIFT-FLOOR with Cryptolite is actually strengthened by hard wear, and heavy loads compress it into an increasingly harder, smoother surface. It can be used on virtually every industrial floor—over solid wood or concrete, indoors or out. Ready mixed, SWIFT-FLOOR is easily applied by any handy man by merely priming the old floor surface, filling with SWIFT-FLOOR, and tamping or rolling to a hard, smooth surface which will withstand 50,000-lb. loads just 60 seconds after application. It can be feather edged. The Monroe Company, Inc., 10703 Quebec Avenue, Cleveland 6, Ohio.

Circle No. 84 on Reader Service Card for more information.
166

verter drive automatically applies the power needed to enter material and fill the bucket in one movement without shifting gears or need for impact loading.

Circle 233 on Reader Service Card for more information

Boxcar Unloader

This SA boxcar unloader is available for operation between two tracks, making it possible to move directly from one car to another on an adjacent track. The unloader is designed to handle grain, dry chemicals, sand, cement and practically all bulk materials up to 2-inch lump size handled in boxcars.



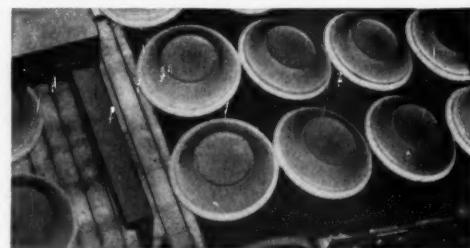
A pantograph arm equipped with a scoop reaches into the car until it meets an obstruction, drops down and withdraws a load of material, discharging it to a track-side hopper. This cycle continues automatically. The unloader occupies an area of approximately 8 by 24 feet when not in use, and requires a single concrete footing for track-side mounting. The manufacturer is Stephens-Adamson Manufacturing Company.

Circle 234 on Reader Service Card for more information



ASHWORTH Process Belts

... engineered for the Specific End Use are designed to Keep Your Product on the Move, provide long life and low maintenance. Fabricated from carbon steel, aluminum coated steel, low chrome-silicon alloys and nickel-chrome analyses as determined by the end use.



WRITE FOR
ILLUSTRATED
CATALOG 59P

ASHWORTH BROS., INC.
METAL PRODUCTS DIV. • WORCESTER, MASS.

Sales Engineers: Buffalo • Chattanooga • Chicago • Cleveland • Detroit • Kansas City
Los Angeles • New York • Philadelphia • Pittsburgh • Rochester
Seattle • St. Paul • Tulsa — Canadian Rep., PECKOVER'S LTD. • Toronto • Montreal

Circle No. 75 on Reader Service Card for more information
JUNE, 1953 • FLOW

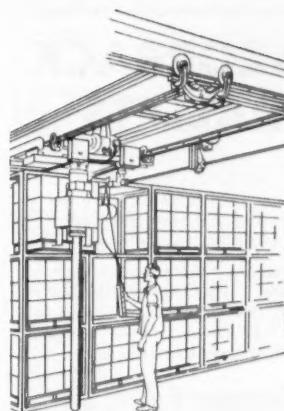
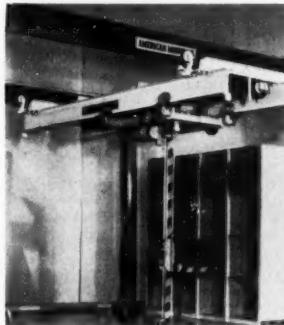
Monorail-Mounted Stacker

SAVINGS in handling costs which averaged better than 50 percent are reported to have been made through the use of a new type stacker crane. Economies effected include the achievement of maximum utilization of otherwise wasted areas, heavy reduction in building cost, and the elimination of need for additional buildings or storage areas.

The stacker (which is also for use in mobile handling jobs) is suspended from a crane truck for movement on a standard-type, double-bridge crane. It includes either a rotating mast equipped with lifting mechanism, or a tubular mast for both rotating and lifting. Masts can be furnished with forks or various devices for handling pallets, drums, rolls or other loads. Movement of crane and truck can be manual or power operated. Aisle width required is approximately the length of the load plus 18 inches.

Although the stacker is generally intended for use when selective and accessible storage is desired—especially when increased storage capacity is required within a limited area—it may also be employed for such handling operations as the movement of heavy die blocks from storage directly into presses.

Courtesy American Monorail Co.



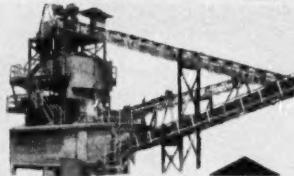
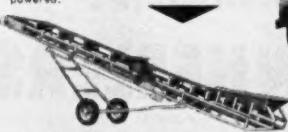
HANDLING 1000 lb. pallet loads, sketched above, stacker has tubular mast with a rotating and lifting unit. Movement of crane bridge and lifting fork is motorized. Other motions, including rotation, are manually controlled.

SPECIAL FORKS allow stacker, left, to pick up and store 30 and 50 gallon drums in racks four high.

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for Better Bulk Material Handling and Transport

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One of many Baughman Conveyors. Standardized or job-fitted. Lengths up to 46'. Gasoline or electric motor powered.



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BAUGHMAN MANUFACTURING CO., Inc.
103 Arch St. Jerseyville, Ill.

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Arkansas Pallet Co.
P. O. Box 794-A Phone 6474
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Advertisers' Index

A

Abell-Howe Co.	166
Acme Steel Co.	33, 117
Aerol Co. Inc.	11
All-Steel Welded Truck Corp.	149
Allied Mfg. & Sales Co.	161
Alvey Conveyor Mfg. Co.	10
Alvey Ferguson Co.	14
American Chain & Cable Co., Chain Sling Div.	27
American Chain & Cable Co., Wright Hoist Div.	26
American Monorail Co.	29
Arkansas Pallet Co.	168
Ashworth Bros. Inc.	166
Automatic Transportation Co.	1

B

Baker-Lull Corp.	28
Baker-Raulang Co.	6 & 7
Baldwin-Lima-Hamilton Corp.	51
Barber-Greene Co.	149
Bassick Co.	103
Bathey Mfg. Corp.	138
Baughman Mfg. Co.	167
Belt Corp.	165
Better Packages Inc.	130
Big Joe Mfg. Co.	137
Bowser, Inc.	145
Brainard Steel Div. Sharon Steel Corp.	107
Brooks & Perkins, Inc.	162
Browning Crane & Shovel Co.	21
Buda Co.	95
Buffalo Weaving & Belting Co.	58
E. W. Buschman Co.	38

C

Cambridge Wire Cloth Co.	151
Central Fibre Products Co.	126
Cesco Container Co.	155
Chain Sling Div., American Chain & Cable Co.	27
Chain-O-Flex Corp.	144
Champion Iron Works, Inc.	123
Chase Foundry & Mfg.	94
William Christensen Co. Inc.	150
Clark Equipment Co.	39
Colson Equipment & Supply Co.	162
Cone Drive Gears Div.	12
Conveyor Specialty Co. Inc.	34
Cullen Friestedt Co.	146

D

Dempster Brothers, Inc.	15
Derby Sealers, Inc.	126
Detroit Hoist & Machine Co.	133
Dico Co.	143
W. C. Dillon & Co. Inc.	158
Dixon Automatic Tools, Inc.	158
Chas. Wm. Doepke Mfg. Co.	161

E

Easy Tote Products Co.	164
Eberhardt Mfg. Co.	153
Electro Lift Inc.	156
Elwell-Parker Electric Co.	5
Equipment Mfg. Co. Inc.	156

F

Euclid Crane & Hoist Co.	146
Evans Products Co.	108
Fab-Weld Corp.	144
Fairbanks Co.	54
Harry J. Ferguson Co. Inc.	145
Wm. A. Force & Co.	132

G

Gaylord Container Corp.	127
General Box Co.	110
General Electric Co.	30 & 31, 87
Geneva Metal Wheel Co.	152
Gerotor May Corp.	163
Gerrard Steel Strapping Co.	129
Gifford-Wood Co.	9
B. F. Goodrich Co.	91
Goodyear Tire & Rubber Co.	4
Adolph Gotscho, Inc.	133
Gould National Batteries, Inc.	47

H

Hapman Conveyors, Inc.	22
Harrington Co.	101
Hemco Mfg.	142
Heppenstall Co.	Inside Back Cover
John W. Hobbs Corp.	142
Hoffman Co.	150
Honeyman Mfg. Co.	145
Frank G. Hough Co.	23, 60
Howe Scale Co.	86
Hydroway Scales, Inc.	160

I

Industrial Book Co.	93
International Staple & Machine Co.	121
Ironbound Box & Lumber Co.	160

K

Kimberly-Clark Corp.	125
----------------------	-----

L

Lamson Corp.	52
Lenham Co.	144
Lempco Products, Inc.	139
G. B. Lewis Co.	136
Lewis-Shepard Prod. Inc.	37
Light Intensifier Co.	148
Little Giant Products Inc.	163

M

Madesco Tackle Block Co.	138
Magline, Inc.	100
Magnesium Co. of America	50
Manning Maxwell & Moore, Inc.	99
Manzel Inc.	98
Market Forge Co.	141
Marsh Stencil Machine Co.	130
Martin-Decker Corp.	157
May-Frau Engineering Co.	154
Mercury Mfg. Co.	57
Merrill Brothers	140
Midwest Precision Corp.	154
Milwaukee Truck and Caster Corp.	147
Minneapolis-Moline, Inc.	168
Minnesota Mining & Mfg. Co.	25
Mobilift Corp.	135

Monarch Rubber Co.	19
Monroe Co.	166
Motor Generator Corp.	53
Moto-Truc Co.	46

N

Neff & Fry Co.	102
Nolan Co.	150

O

Samuel Olson Mfg. Co. Inc.	157
Oxy-Catalyst Mfg. Co. Inc.	89

P

Palmer-Shile Co.	170
Pittsburgh Steel Products Co.	2
Powell Pressed Steel Co.	55

R

Rack Engineering Co.	Inside Front Cover
Rapids-Standard Co.	97, 36
Raymond Corp.	45
Ready-Power Co.	94
Revolator Co.	148
Reynolds Metals Co.	104
Richards-Wilcox Mfg. Co.	24
Rotary Lift Co.	143
Rowe Methods, Inc.	164

S

Safeway Industrial Equipment Corp.	159
Sauerman Bros. Inc.	142
Service Caster & Truck Corp.	147
Signode Steel Strapping Co.	131
Silent Hoist & Crane Co.	140
Sisalkraft Co.	132
Stackbin Corp.	94
Stanley Works, The	56
Sterling Wheelbarrow Co.	141
Syntron Co.	159

T

G. H. Tennant Co.	8
Thew Shovel Co.	13
Torcon Co.	35
Tote System, Inc.	32
Towmotor Corp.	83
Towsley Trucks, Inc.	151

U

Union Special Machine Co.	124
Union Steel Prod. Co.	43
U. S. Instrument Co.	102

V

Veeder-Root, Inc.	44
-------------------	----

W

Weber Addressing Machine Co.	128
Westinghouse Electric Corp.	16 & 17, 59
Whiting Corp.	96
Wisconsin Motor Corp.	148
Wright Hoist Div., American Chain & Cable	26

Y

Yale & Towne Mfg. Co.	49
Circle No. 87 on Reader Service Card	169



Item
B-218



Item
B-470
BARREL and
BOX SKID

CONSULT
PS FOR THE BEST
Materials Handling Equipment



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NS-264
SHEET STEEL
GRAB

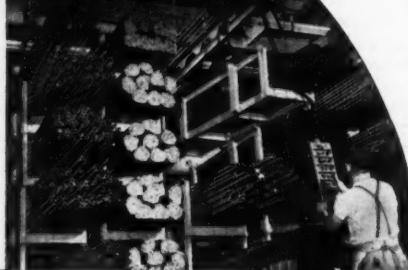


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Note New Ends Lock in Place

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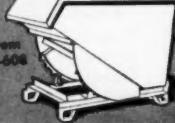


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C-608

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END DUMP



All-Steel
STOCK RACK



Item
HS-415
UTILITIES RACK
on wheels



Item
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Sloped Bottom
BOX and STAND



Item
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BARREL TRUCK
loads automatically

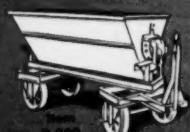


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MULTI-PURPOSE
CART



Item
B-464
CORRUGATED BOX
with handle



Item
B-350
TRAILER TRUCK
side dump

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